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Editorial

WUNDERLICH *VERSUS* HAESER

A Controversy over Medical History

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In 1840 Heinrich Haeser (1811-1885)[1] began editing a new medical journal, the *Archiv für die gesammte Medicin.* A prospectus had been circulated,[2] but the first issue did not carry any programmatic article. Instead, a preface, dated March, 1841, appeared with the fourth issue with which the first volume was completed. This preface set the journal the task of uniting men of science in a common activity: "far removed from the indifference, devoid of strength or savour, of so many of its sister journals, the young periodical should take pride in the decisiveness with which it took sides."[3] It was to be on the side of progress, and the columns of the journal were to be open to anything offered in this spirit. The editor was particularly grateful to the contributors of historical articles which had had no journalistic outlet since the demise of Hecker's *Annalen,* but which would now give lasting value to his journal.[4]

[1] Julius Pagel, "Haeser," *Allgemeine deutsche Biographie,* Nachträge, Bd. 50, pp. 53-54.
[2] Heinrich Haeser, "Vorwort," *Archiv für die gesammte Medicin.* Erster Band, Jena, Friedrich Mauke, 1841, p. V: "Was die Redaction bezweckte, als sie die grosse Zahl der medicinischen Journale um ein neues vermehrte, darüber hat sie sich in dem das Unternehmen einleitenden Prospekte ausgesprochen." We have not seen the prospectus.
[3] *Ibid.*
[4] *Ibid.,* p. VII.

In looking at the historical articles of the volume, we find the following situation. The leading article was by A. W. Henschel on Hippokrates.[6] He gives a very idealistic view: Hippocrates becomes comparable with Socrates only. Hippocratic medicine must not be measured by reference to science. It represents the artistic spirit which, according to Henschel, medicine badly needs. Immediately following is an article by Haeser himself on the question: "With what right is Paracelsus called the reformer of Medicine?" The answer is negative: Paracelsus was not the reformer of medicine. "To be conscious of his proper task, and yet to miss its solution entirely by the most daring transgression of his own principles—just that is the peculiarity of this remarkable mind."[8] Haeser recognized the excellence of some of Paracelsus' remarks, but warns against taking them as proof of a reformation of medicine. The last major historical article of the volume is by Choulant on: "Surgery in the earliest Middle Ages."[7] Choulant is still greatly valued today for his bibliographical work, and the article consists mainly of quotations from the Latin works of surgical authors of the 13th and 14th centuries. The historical articles are followed by a number of reviews of historical works: One by Rosenbaum (pp. 95-122) of the first volume of Littré's edition of Hippocrates, another by Rosenbaum (pp. 540-549) of Ritter's German translation of Celsus, one by Choulant (pp. 550-553) of Ermerin's *Anecdota medica graeca,* another by Choulant (pp. 553-556) of Sprenger's dissertation *De originibus medicinae arabicae sub khalifatu,* and two reviews by Haeser: on a book by Frari on the plague (pp. 560-564) and on a paper by Troxler in which the latter stressed the necessity of studying the history of medicine and science in their national framework. This speech, intended for Troxler's countrymen, the Swiss, gave Haeser an opportunity to express himself on the necessity of having required courses on the history of medicine at the universities:

> Thus these considerations lead the author to a matter which is highly important not only for Switzerland, but for science in general: to the necessity for special professorial chairs for the history of medicine and the theory of national diseases. We should have plenty of reason to complain sadly if this matter needed any further demonstration after what has been cited by Troxler and still earlier by Hecker (namely in the Heidelberg Yearbook à propos the *Lettres médicales* of Dezeimeris). It is obvious that the reform in

[6] A. W. Henschel, "Hippokrates," *op. cit.*, pp. 1-25.

[8] H. Haeser, "Mit welchem Rechte wird Paracelsus der Reformator der Medicin genannt?" *Op. cit.*, pp. 26-43, *see* p. 35.

[7] Ludwig Choulant, "Die Chirurgie im frühesten Mittelalter," *op. cit.*, pp. 417-435.

question, at present urgently demanded by the spirit of science, must come from the authorities. Not even the most distinguished teacher of history—and here it is just as much a question of external superiority of presentation as of thorough knowledge—will succeed in binding the students to his lecture-room as long as the examining body (for the most part for very valid internal reasons) does not concern itself with investigating the historical knowledge of the candidates, as long as the State, clinging to obsolete statutes, does not express in law its conviction of the necessity for the historical education of its physicians, and persists in its failure to recognize the infinite gain which it thereby forfeits.—How are we to define a situation in which at some universities medical students, like the others, are rightly obliged by law to take a complete course in philosophy and, in particular, to audit history of philosophy, while it is left to their discretion to care, or not, to go to lectures on the history of medicine with the announcement of which some junior or senior lecturer is kind enough to complement the catalogue? Or is the majority of our young doctors perhaps capable of supplying the deficiency through their own studies? One needs to know our practising physicians in order to realize their candid and incredible ignorance of the history of their science.—May Germany be spared the shame of seeing this deficiency disappear only after Paris has again filled its momentarily orphaned chair of history; may it not experience the humiliation of receiving instruction in this matter from "barbarians." For, as far as we know, there are now in Europe, apart from Italy, only 2 chairs in the history of medicine: Berlin and—Petersburg![8]

While the second volume of Haeser's *Archiv* was in the process of publication, a new journal made its appearance: the *Archiv für physiologische Heilkunde,* edited by W. Roser and C. A. Wunderlich. The "Introduction" by the editors, on "The defects of present German medicine and on the necessity for a decisive scientific direction in it," has become famous.[9] It was the battle cry, so to speak, of the new generation for a radical reform of medicine. The editors were very young: Wunderlich was born in 1815 and Roser in 1817. The tone was very aggressive as was customary among the young leaders of the era of "medical reform."[10] The first article proper was written by Wunderlich. It dealt with "Medical journalism,"[11] and here the criticism found its main

[8] H. Haeser, Review of "Umrisse zur Entwickelungsgeschichte der vaterländischen Natur- und Lebenskunde, der besten Quelle für das Studium und die Praxis der Medicin." Von Dr. J. P. V. Troxler, Prof. d. Philos. an d. Hochschule in Bern. St. Gallen, 1839. Verlag von Scheitlin u. Zollikofer. 8. S. 63. *Op. cit.*, p. 558 f.

[9] Roser and Wunderlich, "Ueber die Mängel der heutigen deutschen Medicin und über die Nothwendigkeit einer entschieden wissenschaftlichen Richtung in derselben," *Archiv für physiologische Heilkunde,* 1842, *1*: i-xxx.

[10] On this period *see*: Erwin H. Ackerknecht, "Beiträge zur Geschichte der Medizinalreform von 1848," *Sudhoffs Archiv für Geschichte der Medizin,* 1932, *25*: 61-109, 113-183.

[11] Wunderlich, "Die medicinische Journalistik," *op. cit.*, pp. 1-42.

target in Haeser's *Archiv für die gesammte Medicin*. Haeser's journal was accused of lacking "Policy (*Tendenz*) and character."[12] Special attention was paid to the historical articles of the first volume, and in the following we give a translation of Wunderlich's interesting criticism:

The first number of the *Archiv* begins with two historical discussions; besides these, there follow several other essays of historical content, and these alone take up one fifth of the first yearly volume. Convinced though we are of the importance of historical research properly undertaken, to us such a heaping of historical material in a journal addressed to the present seems at all events to be a blunder.

What we are, however, much more eager to express at the moment is the conviction that historical investigation of medicine has, to date, in no wise accomplished what it could accomplish, and that in it there is a predominant tendency which undoubtedly bears handsome witness to the respectable studiousness of our countrymen, but which also betrays the lack of practical sense of which we have so often been accused. Häser's *Archiv* is a striking example of what we mean. Of the nine longer and shorter historical essays, two are concerned with Hippocrates; further, one with late Greek medicine, one with Celsus, one with Arabic medicine, one with surgery in the early middle ages, one with the Black Death in the 14th century, one with Paracelsus! One should not imagine that these essays are integrated and thereby embrace in monographic form the most important things in older medicine. For that they are much too concerned with often unimportant particulars and are not sufficiently instructive. No, chance brought them together, or rather, they were instigated by the widespread and inherited preference of our people to devote themselves to things which are as remote as possible. They have sprung from that honourable but unhappy antiquarianism (*Antiquitätengeist*) which, with the sincerest and most thorough earnestness chooses trifles as the object of its investigation, if only they are ancient, unfortunately overlooking in the process the great and the obvious which would make us feel at home in ancient Hellas and Rome, and would thereby suffer us to forget that we are Germans and that we live in the 19th century. We respect every kind of endeavour, but it is prejudicial to a practical science like medicine, if its historical scholars pay homage to a one-sided antiquarianism (*Alterthümlerei*). And one-sided it is, for in cultivating the old, what is nearest to us is neglected. We have monographs about the Greeks and the Scholastics, about Paracelsus and Van Helmont; the immediate past remains almost unnoticed. Häser's *Archiv* which gives us eight articles on ancient and medieval medicine, gave only 1½ pages to more recent historical events—and in these it discusses Swiss national medicine! By this passion for the foreign, for the antiquated, and for unedifying specialties, the practising physician is methodically estranged from historical study. What does he care about hearing of all the fantastic

[12] *Ibid.*, p. 9.

ideas with which one could impress the public in Paracelsus' time? What does he care about the Black Death or St. Anthony's fire? Of what concern is it to him whether people were syphilitic at the time of Celsus, or not? It is true, these are all very interesting questions; but interest in them is limited to an extremely small circle. Considering the indifference of the large medical public to historical investigations, history should not seek to impose itself upon the quite otherwise occupied physician with the impressiveness of all its unapproachable greatness, in all its learned majesty. It must first show him that it could be useful to him; it must first recommend itself to his attention by helping him to understand the time in which he lives and to solve the problems which plague him in the present. Some will then not fail to penetrate more deeply into wider and more exact research.—You complain of the unscholarly temper of your colleagues who only yawn over the learned results of your night-watches. Blame first yourselves that you have not understood how to tickle the palate on which you urge an unaccustomed dish!—One should not imagine that a knowledge of the spirit of Hippocrates or Paracelsus is transmitted by way of a short journal article. Such an article is only understandable to one who is already at home in those times and circumstances and already familiar with the writings of those ancient physicians. In spite of all efforts to be objective, to the uninitiated such an abstract discussion is bound to look like the subjective opinion of the historian. And if he reads ten similar discussions of the same thing, he will still be unable to use them as a basis for forming an independent judgment.

Our purpose would be greatly misunderstood, if one were to believe that herewith we wish the study of old and ancient writers limited. No! We simply demand that more modern times be considered equally, or rather more, extensively. Haller, Zimmermann, Bordeu, the School of Montpellier, French surgery in the 18th century, Stoll, Cullen, Hunter, Bichat, Dupuytren, Rasori, Broussais, Laennec, Reil, Autenrieth, the German school of natural philosophy etc., these are historical phenomena of which the ordinary doctor, and even many an author, has a strange and very incomplete picture. And yet the good and the bad sides of our present eclecticism are largely composed of these elements. Historical investigations of this more recent past, if undertaken in the right spirit, will never fail to be a beacon to the present and will persuade even the most practical practitioner that his knowledge is mere piecework, if he does not know whence it comes and the manner of thought of his predecessors.

Still more useful than the monographic treatment of single periods and important people would be yet another kind of historical study which is also rather neglected nowadays. Individual doctrines, specialties, therapeutic methods, should be subjected to historical investigation. In this way the genesis of many theories and medical maxims can be shown, and we can demonstrate how they have been allowed to attain the status of incontestable facts and incontrovertible rules. One will discover the weak roots of many a

traditional assumption whose importance one today scarcely thinks it necessary to prove. One will realize from what errors they sprang, how they, nevertheless, were able, even after the destruction of their foundations, to propagate themselves from generation to generation without acquiring solidity through gaining factual support. One will realize how powerful a motive in orthodox medicine is habituation to a certain point of view and manner of action, and how very often the consolation that the whole world believed in something, silenced the question as to the real proof. History of this persuasion will be little concerned with ferreting out the peculiarities of famous men and strange times; rather it will trace the origin of the ideas (*Ursprung der Ideen*) that govern the thought of today. It will reveal how science was formed. The illusory in theory and practice is bound to melt before it, and room can be made for a more thoughtful view of things.[13]

This attack appeared in time to allow Haeser to address an open letter to Wunderlich, dated January 12, 1842, the year of the second volume of his *Archiv* to which we find it appended.[14] Though Haeser is on the defensive, his reply lacks neither skill nor a certain justification. He reminded Wunderlich that they were all still very young and that it might be advisable to have some positive achievements to show before trying a general reform. Here Haeser had the advantage of having the *Historisch-pathologische Untersuchungen* to his credit, a work that was eventually to merge into the third volume of his great "History of Medicine." Yet, just in his own field, that of medical history, Haeser's defense is relatively brief:

You base further objection to the *Archiv* on the historical essays, examples of which by Henschel, Choulant, Rosenbaum, recently also by Hecker, and myself have appeared there. The accumulation of historical material, in which you include not only the actual essays but also several critiques of historical medicine, literature, etc., you call a blunder, since a journal should be for the present. I must confess that I have attempted to the extent of my powers, and shall in the future so attempt, to give my journal more than ephemeral significance, and that it was my belief that this end could be attained with the aid, amongst other things, of studies from the pens of our most renowned historical investigators. I am namely of the opinion that just by being so fortunate as to open the *Archiv* with Henschel's study of Hippocrates, I

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[13] *Ibid.*, pp. 10-13.

[14] H. Haeser, "Sendschreiben des Redacteurs des Archivs für die gesammte Medicin an den Mitredacteur des Archivs für physiologische Heilkunde, Herrn Dr. Wunderlich in Tübingen," 8 pp. In the copy of volume 2 of Haeser's *Archiv* (Jena, 1842) belonging to the College of Physicians of Philadelphia, the above *Sendschreiben* is bound in at the end of the volume. We take this opportunity to thank the College and Dr. W. B. McDaniel, 2d, for having made the first two volumes of Haeser's *Archiv* available to us.

have made its first pages much more valuable than if I had planned some ephemeral journal and had shown that it, like all the others, is of no consequence, and that I personally am the messiah who will deliver Israel from her ancient misery. As far as my own historical essays are concerned, I surrender them to you completely; or rather, your judgment of them is a matter of complete indifference to me, since I am bound to assume your complete ignorance of the history of your science, if only because of the tone in which you, respected colleague, without having as yet accomplished anything of importance in your field, judge the accomplishments of men who have, for a longer or shorter period of time, been recognized as tried physicians and scholars. This is not the preferred tone usually attained by thorough historical studies, in the pursuit of which the small, often pitiful, thing called the *ego* tends to become smaller and smaller. If only to gain this modesty, respected colleague, I should like to recommend the historical studies to you. You would then be less outspoken in your judgment of work which you reject with a tone of superiority, without having even the slightest idea of its aims and attainments. I must break off here, for I feel a slight wave of anger mounting in me, not on account of your censure, but because of your wrongheadedness and your lack of respect for a thing which would be so healthy just for you![15]

We have not been able to find a reply from Wunderlich, and this particular controversy over medical history seems to have come to an end here. It must, of course, be seen within the framework of the medico-historical situation of the time.[16] However, if we confine ourselves to the immediate issue, we can characterize the opposing positions as follows. Wunderlich insists on the need for medical history of direct utility: concentration upon the immediate past with which all medical men have to come to terms, and tracing of the ideas which concern the current theory and practice of medicine. Wunderlich is right in criticizing the amount of space which Haeser assigned to medical history in a general medical journal. On this point, Haeser's reply is weak. On the other hand, the historical articles and reviews would have done credit to a journal of medical history. Haeser's misplaced resentment may well have been motivated by the conviction that the value of medical history is in its long-range perspective and not in a one-sided emphasis on the "ephemeral."

The controversy represents two points of view, expressed by two different personalities.[17] Haeser, though never entirely severed from

[15] *Ibid.*, pp. 5-6.

[16] Ludwig Edelstein, "Medical historiography in 1847," *Bull. Hist. Med.*, 1947, *21*: 495-511. Edith Heischkel, "Die deutsche Medizingeschichtschreibung in der ersten Hälfte des 19. Jahrhunderts," *Klin. Wchnschr.*, 1933, *12*: 714-717.

[17] Paul Diepgen, "Das Schicksal der deutschen Medizingeschichte im Zeitalter der

practical medicine, is remembered as one of the great historians of medicine whose classical textbook is still used today.[18] Wunderlich, though he too wrote a general history of medicine,[19] is remembered as a great clinician. Although their controversy seems bound to a particular situation in the development of German medicine, we thought it remarkable that so many of the slogans of today can be found in the excerpts we translated: history of "ideas," the need for actuality as against "antiquarianism," the need for required teaching of medical history. The debate was not for, or against, the study and teaching of medical history. Both protagonists expressed their high respect for it, and both taught it to their students.[20] Rather, the discussion related to what kind of medical history should be cultivated by and for medical men. The professional historian of medicine wanted to spread his discipline, to cultivate the whole field, and to find in scholarship a counter-balance to ephemeral views, even if his investigations led him far away from the problems of the day. The clinician demanded emphasis on just those historical issues that contributed directly to the orientation and understanding of the practising physician.

More than a hundred years have passed, yet not only the slogans, but the very problems are still ours. We may take one or the other side, or we may be inclined to think that there is room for both. Medicine is not a purely contemplative science; whatever is to be a part of medicine must, *qua* such, be able to contribute something useful. Yet it is equally true that usefulness is a weak ground for any discipline. No discipline can flourish without being rooted in the search for knowledge unhampered by pragmatic considerations. At any rate, the realization that, in a stormy period of German medicine, ideas were voiced which we are inclined to think the product of our own stormy time, may be of help to all of us. It shows at least that there are few situations that do not have a precedent in the past. And the excited tone of the old feud may cause us to go about our work more calmly, conscious that if the argument is old, only the quality of our work, whatever its direction, can have something valuable to add.

Naturwissenschaften und ihre Aufgaben in der Gegenwart," *Deutche med. Wchnschr.*, 1934, Nr. 2, pp. 66-70; see p. 66 f. where Diepgen contrasts Haeser's and Wunderlich's attitudes. See also by the same author: *Geschichte der Medizin*, II. Bd., 1. Häfte, Berlin: De Gruyter, 1951, p. 217.

[18] Heinrich Haeser. *Lehrbuch der Geschichte der Medicin und der epidemischen Krankheiten*. 3 vols. Dritte Bearbeitung. Jena, 1882.

[19] C. A. Wunderlich, *Geschichte der Medicin*. Stuttgart: Ebner and Seubert, 1859 (*see* also next footnote).

[20] The subtitle of Wunderlich's *Geschichte der Medicin* (ftn. 19) reads: "Vorlesungen gehalten zu Leipzig im Sommersemester, 1858."

PHYSICIANS IN MEDIEVAL ENGLISH RELIGIOUS HOUSES

E. A. HAMMOND

The extent to which the study and practice of the medical arts in the Middle Ages were engrossed by churchmen is a problem which even the most serious medical historians have dismissed with casual generalities. Yet it seems certain that throughout much of the period, ecclesiastical physicians dominated the field of medicine. It is evident also that in every medieval century there were lay physicians of knowledge and skill. The relative importance of monastic medicine varied, of course, from country to country and age to age. It is the purpose of the present study to consider a segment of the problem by assembling the evidence concerning the lives, the knowledge, and the practice of the medical monks and friars of English origin, or whose influence touched England, so as to permit judgment of their place in the general history of English medicine.

By the end of the sixth century, when successive infiltrations of barbarian groups had seriously disturbed the intellectual life of mediterranean Europe, such scholarly activity as survived found sanctuary within the church, and especially within the walls of the Benedictine monasteries. Medicine, together with other branches of learning, took refuge within the cloister and owed its preservation and development chiefly to monastic scholars. The monastery was one of the few places affording the quiet and comfort favorable to the successful treatment of disease, circumstances in the world outside being as turbulent as they were. And so it was in connection with the monasteries that the hospitals and hospices of the times were established. Throughout the early Middle Ages, in southern Europe at least, the study and much of the practice of medicine were monastic pursuits.[1]

In England, on the other hand, medicine came to claim the attention of monks somewhat later. Only the slightest traces of Graeco-Roman medicine survived the Anglo-Saxon invasion, and the medical practice of post-Roman Britain was of a very low order. Its substance was essentially a "mixture of traditional practice, herbal knowledge, and popular magic,"[2] while its practitioners were a varied assortment of magicians,

[1] For a brief treatment of this subject see A. Castiglioni, *A History of Medicine* (New York, 1941), pp. 292, 293.

[2] Dom David Knowles, *The Monastic Order in England* (Cambridge, 1949), p. 516.

soothsayers, seers, and cranks. The first Benedictine house was founded at Canterbury in 606 A. D., but there is no evidence that between that time and the middle of the tenth century medical practice had improved or that it was notably the work of monks.

Before the Conquest certain Norman monasteries had been stimulated by a few prominent churchmen to assume the study of medicine. Gerbert, through his school at Rheims, had encouraged many scholars to turn to the more remote branches of the arts, including medicine. The school at Chartres, dominated by such men as Richer and Fulbert, became renowned, and some of its fame was due to its emphasis on medical lore.[3] The learning and enthusiasm of William of Dijon (961-1001) were in large measure responsible for a quickening of medical interest at Fécamp and other Norman Centers.[4] William was born in Italy and probably educated at one of the well-known Italian schools. It is reasonable to assume that his medical knowledge was in the Salernitan tradition, that is, based on fragments of Greek and Latin texts with few of the elements of magic.[5] In Normandy this Salernitan knowledge came to be merged with the empirical elements of Norman medicine to become an important part of the medical heritage of Norman and Angevin England. Professor MacKinney has noted that the schools of Rheims and Chartres were priestly rather than monastic centers.[6] This fact, however, did not deprive the Norman monasteries of the blessings of these schools, and many houses, such as Marmoutier, Fécamp, Jumièges, and Bec, enjoyed the services of physicians and teachers trained in the great cathedral schools. Out of this continental background emerged many eminent churchmen whose careers impinged markedly on the medical life of England. As Professor Knowles points out, ". . . from the first arrival of Norman monks in England . . . there is a succession of monk-physicians, at first trained

See also J. H. G. Grattan and Charles Singer, *Anglo-Saxon Magic and Medicine* (London, 1952), pp. 7-17.

[3] L. C. MacKinney, "Tenth century medicine as seen in the 'Historia' of Richer of Rheims," *Bull. Hist. Med.*, II (1934), 347-75.

[4] Two biographers emphasize St. William's enthusiasm for learning as well as his role in the establishing of schools in various monasteries. See J. P. Migne, *Patrologiae, series latina* (Paris, 1844-64), CXLI, 864; *ibid.*, CXLII, 697 ff. See also the biographical sketch of William in *Nouvelle biographie générale* (Paris, 1858), XXII, 595.

[5] For an appraisal of the school of Salerno in the tenth century see Castiglioni, *op. cit.*, p. 299 ff. For a recent reappraisal see Paul Oskar Kristeller, "The School of Salerno," *Bull. Hist. Med.*, XVII (1945), 138-194.

[6] L. C. McKinney, *Early Medieval Medicine with Special Reference to France and Chartres* (Baltimore, 1937), p. 148.

within the cloister, but later themselves graduates of Salerno or other medical universities."[7]

Baldwin, a monk of St. Denis and erstwhile prior of Leberaw (Alsace), was one of the first of these to arrive in England.[8] Born at Chartres and probably a student of medicine at its famous cathedral school, he acquired such fame from his medical practice that in 1059 he was called to the English court to become the physician of Edward the Confessor.[9] When Edward rebuilt the priory of Deerhurst (Gloucestershire) and presented it as a cell to St. Denis, Baldwin was chosen as its prior.[10] In 1065 he was summoned to St. Edmund's to attend Abbot Leofstan, who was suffering from a paralysis of the hands.[11] Failing to effect a cure, the physician conspired to succeed the abbot in holy office when the latter died in that same year. During many of his years as abbot of St. Edmund's Baldwin was retained as physician of William the Conqueror, following a tradition that the royal family could always command the most reputable medical service available in the realm. There is ample evidence that his medical practice brought him into association with many other Norman and English dignitaries of his day. Archbishop Lanfranc was his patient,[12] as was Arfast, Bishop of Thetford, whom he is said to have cured of an eye injury.[13] In the service of the Conqueror Baldwin went on successive journeys to the continent making his skill available to eminent persons wherever his travels took him. He was probably present at the death of the king in 1087, although contemporary chroniclers do not specifically identify him as a member of the group of physicians attending the monarch. Abbot Baldwin died ca. 1097.[14]

[7] Knowles, *op. cit.*, p. 517.

[8] *Memorials of St. Edmund's Abbey*, ed. Thomas Arnold, Rolls Series (London, 1890-96), I, 344.

[9] E. Wickersheimer, *Dictionnaire biographique des médecins en France au moyen âge* (Paris, 1936), p. 64.

[10] W. Dugdale, *Monasticon Anglicanum* (London, 1846), III, 100.

[11] William of Malmesbury's *De Gestis Pontificum Anglorum*, ed. N. E. S. A. Hamilton, Rolls Series (London, 1870), p. 156. See also *Hermanni . . . De Miraculis Sancti Eadmundi* in *Mem. S. Edmund's*, I, 56: "Baldewinus, ex Franciae partibus gloriosis, monachus sancti Dionisii Parisiacensis, praepositus vero Lebraha monasterii in Alemannia in territoria Elysacii, sed et medicina peritus, ex hoc quoque a rege Anglorum cum multa diligentia habitus."

[12] Migne, *Patrol., ser. lat.*, CL, 525.

[13] *Hermanni . . . De Miraculis*, p. 62 ff.

[14] A Bodleian MS. of Florence of Worcester places his death in 1097. Since this is probably a transcription of a monk of Bury, it may be assumed to be authentic. This MS. has been dated at 1131, close enough to the event of Baldwin's death to have chronological

Faritius (d. 1117), monk of Malmesbury and abbot of Abingdon, was the most famous physician in England during the reign of Henry I. A native of Tuscany, claiming Arezzo as his birthplace, Faritius had possibly studied at Salerno. Although the date of his arrival in England cannot be established, in 1078 he witnessed the translation of the relics of St. Aldhelm to Malmesbury.[15] By the year 1100 he was cellarer at Malmesbury and a physician of wide reputation.[16] In that year he became abbot of Abingdon, where he was received with joy by the monks of the chapter. He was the chief physician present at the birth of Queen Matilda's first child in July, 1101, but the date when he first administered to the royal family is unknown.[17] Henry had sent the queen to a place near Abingdon so that she might have the services of the famous physician. It has not been determined why Faritius was not summoned to come to the royal household, nor can the exact nature of the abbot's medical service at the accouchement be specified. In this particular case Faritius was assisted by Grimbald, also an Italian physician. It has been suggested that this is further proof of Faritius' Salernitan background.[18]

Both the Abingdon chronicler and William of Malmesbury write of Faritius in terms of admiration and reverence. He appears to have been held in such esteem that the king sometimes entrusted his physical welfare to the skill of this man alone.[19] Under his abbacy the monastery at Abingdon flourished. The number of monks increased from twenty-eight to eighty. Many books, including some medical texts, were transcribed for the abbey library.[20] Although much of his time was taken up with the routine affairs of the monastery, Faritius still applied himself to the practice of medicine. Dugdale mentions at least two instances in which his

reliability. Florence, Simeon, and Hoveden, probably using identical sources, are in agreement. On the other hand Harleian MS. 447 gives the date of his death as Jan. 4, 1098. See *Mem. S. Edmund's*, I, lxi, lxii.

[15] See Faritius' *Vita S. Aldhelmi* in Migne, *Patrol., ser. lat.*, LXXXIX, 79.

[16] *Chronicon Monasterii de Abingdon*, J. Stevenson, Rolls Series (London, 1858), II, 44; *ibid.*, pp. 285-6.

[17] *Ibid.*, p. 50.

[18] Knowles, *op. cit.*, p. 517. The passage in *Chron. Mon. de Abing.*, II, 50, is as follows: "Verum regina Mathildis prae caeteris hunc impetrandi facultatem assecuta est, nec multo post regia eam primo contigit prole gravari. Mandatur mox medicis ei curam impendere, prognostica edicere, ne in aliquo perclitetur. Quorum primus abbas Faricius, secundus Grimbaldus, uterque gentis et linguae unius, ac per hoc plurimo inter se divincti amore fuere."

[19] *Chron. Mon. de Abing.*, II, 44. ". . . probatissimus officio medico adeo ut eius solius antidotum confectionibus rex ipse crederet saepe medendum. . . ."

[20] *Ibid.*, p. 289.

medical practice was rewarded to the benefit of the monastery itself. Milo Crispin, in the seventh year of the reign of Henry I, gave land at Colebruc to the monastery (Abingdon) "pro servitio quod abbas Faritius ei in sua infirmitate impenderat."[21] The Abingdon cartulary mentions additional gifts for professional services from the de Vere and fitz Haymon families.[22] The abbot was seriously considered as a successor to Anselm as archbishop of Canterbury, his candidacy having the support of the king himself. But the bishops, especially those of Lincoln and Salisbury, opposed his election. They preferred a secular clergyman. Besides, they deemed it unseemly to choose as their archbishop a man who enjoyed fame as healer of women's diseases.[23]

Another monastic physician of the same period was Albert, monk of Bec, who came to Canterbury in the train of Lanfranc and became attached to the cathedral monastery there. Around 1070 Anselm, prior of Bec (1063-1078), sought the advice of Albert concerning the maladies of two churchmen. The first of these was Lanfranc, instructor of liberal arts at Bec and nephew of Archbishop Lanfranc, while the second was a monk named Maurice. In his letters Anselm described the symptoms of the illnesses, then implored Master Albert to study these symptoms and advise him as to the causes and possible cures of the ailments.[24] The first of these letters is addressed to the Archbishop himself, but later ones were written directly to the physician.

There is authority for identifying Geoffrey, a monk of St. Évroult (Normandy), as one of five Benedictines who founded a school at Cottenham (Cotenham), near Cambridge. Geoffrey is said to have taught medicine.[25] Much better known on the continent, but of minor importance in England was another monk of Évroult called Goisbert. He appears to have visited England in the retinue of his patron, Ralph de Conches, and to have tarried for some time (ca. 1076).[26]

[21] Dugdale, *op. cit.*, I, 508 n, 521; *Chron. Mon. de Abing.*, II, 97.

[22] *Chron. Mon. de Abing.*, II, 55, 96.

[23] *Ibid.*, p. 287. ". . . tunc electus est Faricius ad archiepiscopatum, episcopus lincolniensis et episcopus Salesburiensis abstiterunt, dicentes non debere archiepiscopum urinas mulierum inspicere." See also *De Gestis Pont. Anglo.*, p. 126.

[24] L. Dubreuil-Chambardel, *Les médecins dans l'ouest de la France aux XIe et XIIe siècles* (Paris, 1914), p. 98. See also St. Anselm, *Epistolae*, in Migne, *Patrol., ser. lat.*, CLVIII, 1084 *et passim*.

[25] L. Maitre, *Les écoles épiscopales et monastiques de l'occident* (Paris, 1866), p. 127; Dubreuil-Chambardel, *op. cit.*, p. 165.

[26] *Ordericus Vitalis Historia Ecclesiastica*, ed. A. Le Prevost (Paris, 1838-55), II, 402. Ordericus Vitalis, who became a monk at St. Evroult in 1085, supplies abundant

These Black Monks continued to be the most noted medical practitioners of England throughout the twelfth century. In the earlier years of the century there was at Malmesbury a monk named Gregory who was for some time the personal physician of Ernulf of Hesding, Count of Perches.[27] William of Malmesbury tells of the Count's visit to the monastery and of how Gregory tried in vain to cure an affliction of the Count's hands. Much better known was Hugh, Abbot of Chertsey (1107-1128), who as a physician accompanied Ralph d'Escures, Archbishop of Canterbury, to Rome in 1116. The archbishop was taken ill in France and found it necessary to linger at La Ferte castle until he had recovered sufficiently to resume his journey. Several chroniclers, notably William of Malmesbury and Eadmer, have recorded the incident of the archbishop's illness, but only Hugh, precentor and archdeacon of York, has noted the presence of the abbot of Chertsey as the attending physician.[28]

The vigorous intellectual life of St. Alban's abbey could hardly have failed to attract men of rare medical skill and knowledge. No monastery in all England equaled it in the range and excellence of its scholarship. Certainly no monastery could boast of more active publicists. Its coterie of physicians, many of them trained at Salerno, was distinguished by the presence of the well-known physician, Guarin, or Warin, who became the twentieth abbot of the monastery in 1183.[29] Originating in a family of moderate means in Cambridge,[30] Warin and his brother Matthew were educated at Salerno, where they excelled in literature and medicine. Returning to England with the title Magister, both took the monastic habit at St. Alban's. Warin had gained fame in the realm of letters even prior to taking the vows. There is no specific evidence that either of these brothers was ever actively engaged in the practice of medicine at St. Alban's, but their influence was doubtless considerable. The chronicle of Thomas of Walsingham contains a lengthy account of Abbot Warin's

biographical detail on Goisbert, whom he identifies as a person of high birth. Goisbert is mentioned repeatedly as the "famous physician."

[27] *De Gestis Pont. Anglo.*, p. 438.

[28] *Historians of the Church of York*, ed. J. Raine, 3 vols., Rolls Series (London, 1879-94), II, 143.

[29] *Chronica Monasterii S. Albani*, ed. H. T. Riley, six parts in eleven vols., part four being Thomas Walsingham's *Gesta Abbatum Monasterii S. Albani*, Rolls Series (London, 1863-73). Walsingham is hereinafter referred to as *GASA*.

GASA, I, 194 f. "Hic [Garimus] cum fratre suo, Magistro Mattheo, similibus dotibus, etsi non tantum, insignito, in physica apud Salernum eleganter atque efficaciter erudito. . . ."

[30] Dugdale, *op. cit.*, II, 480.

regulations relating to the care of the sick.[81] In fact, the care of leprous monks and nuns, the building of hospitals, the techniques of bloodletting, and similar matters were of special concern to the abbot. His death occurred in the year 1195.[82]

Continuing the medical tradition, the monks of St. Alban's chose as their next abbot Master John of Cella.[83] Abbot John was born of a family of modest circumstances (*ex mediocri prosapia*) in Stidham (Bedfordshire), and in the course of time found his way to Paris, where he earned the title of Master and where he was estimated to have been a veritable Galen in medicine.[84] Although John held the abbacy from 1195 till 1214, the chroniclers of the abbey neglect to mention his medical practice. As he came to his deathbed in the abbey's infirmary, however, they remind us once more that John was a superb physician (*physicus praeelectus*),[85] and that it was by no means odd that he was able to perform a uroscopy on himself and on this basis to predict his own death. He was, after all, a marvellous judge of urine (*iudex urinarum incomparabilis*). Assisting the abbot in this diagnosis was another physician of the monastery, Master William, also a monk. Abbot John's vision was so impaired that he called upon William to describe to him the condition of the urine.[86] Although Master William, sometimes identified as William of Bedford, later in his career was to become prior of Tynemouth and eventually prior of the convent at Worcester,[87] no mention is made of his medical activity after his departure from St. Alban's.

At least two other physicians appear in the St. Alban's records for the first half of the thirteenth century. One of these, Master Reginald, physician and monk, was a man of sufficient eminence and reputation to have been dispatched to Rome in 1235 for the purpose of obtaining the papal confirmation of the election of John of Hertford as abbot of

[81] *GASA*, I, 201 *et passim*.

[82] *Ibid.*, p. 217.

[83] *Ibid.*, p. 217.

[84] *Ibid.*, p. 217. "unde, cum virilis esset aetatis, in Grammatica Priscianus, in Metrico Ovidius, in Physica censeri potuit Galenus."

[85] *Ibid.*, p. 246.

[86] *Ibid.*, p. 246. "dixit Magistro Willelmo physico, monacho nostro . . . ; 'Quid tu vides hic et hic, frater ?' At ipse quae vidit indicavit. At Abbas,—'Eya, Deo gratias. Adhuc concessit mihi Deus, ad poenitentiam, spatium triduanum; sed post tres dies dissolvar.' Quod qui audierunt, bene crediderunt; quia experientissimus in arte medicinae erat, et consimilia in tali casu de aliis saepius praedixerat."

[87] *Annales Monastici*, ed. Rev. H. R. Luard, five vols., Rolls Series (London, 1864-69), I, 67. Numerous references to William's career as prior of Worcester appear *ibid.* I and IV, *passim*.

St. Alban's.[38] In the obituary records of the abbey the death of Reginald (*phisicus, sacerdos*) was recorded for October 2, 1251. The other physician and monk was Thomas, at one time the personal physician of the Earl of Arundel. He attended the earl on a pilgrimage to the Holy Land. The earl died while on this journey, and Thomas carefully preserved the body, returned it to England, and gave it interment at Wymondham (Windham), Norfolk.[39] Thomas was later to become prior of Wymondham.[40] His death is recorded for th eyear 1248.[41]

At the beginning of the thirteenth century the abbey of Bury St. Edmund's claimed the services of a monk-physician named Walter, who flourished during the abbacy of Samson (1182-1212). In the year 1197 a new stone almonry was built for the abbey, chiefly from funds contributed by Walter, the almoner. If we may trust the information of Jocelin of Brakelond, who was guestmaster (*hospiciarius*) at the time, this money had been acquired by Walter through his practice of the art of medicine.[42] We may assume, with Professor Knowles, that Walter's services were available to persons of means outside the monastery.[43] He first appears in the chronicle of Jocelin as one of twelve members of the convent chosen by the prior to appear before King Henry to elect an abbot. In this instance he is designated "magister Walterus medicus."[44]

The early years of the thirteenth century also found at the abbey of Evesham a monk-physician of sufficient importance to come to the attention of the abbey's chronicler. This was Thomas of Northwick, famous also as the architect of the abbey church around the year 1200.[45] A year or so later Master Thomas and a fellow monk, Thomas de Marleberge, were evicted from the convent by the abbot, whose ire they had aroused.

[38] *Matthaei Parisiensis Chronica Majora*, ed. Rev. H. R. Luard, seven vols., Rolls Series (London, 1872-84), III, 307, 313, 316; *Chronica Rogeri de Wendover*, ed. H. G. Hewlett, three vols., Rolls Series (London, 1886-89), II, 606 n.

[39] *GASA*, I, 275; *Chron. Maj.*, III, 67.

[40] *GASA*, I, a75; F. Blomefield, *An Essay Towards a Topographical History of the County of Norfolk* (Fersfield, 1739); also Dugdale, *op. cit.*, III, 326.

[41] *Chron. Maj.*, VI, 87, 278.

[42] *Mem. S. Edmund's*, I, 297. ". . . ubi quidam frater noster Walterus medicus, tunc temporis elemosinarius, multum apposuit, quod arte medicinali adquisivit." The long-standing problem of Jocelin's identity has been substantially solved by R. H. C. Davis. See his *The Calendar of Abbot Samson of Bury St. Edmunds and Related Documents* (Camden Society, LXXXIV, 1954), pp. li-lvii.

[43] Knowles, *op. cit.*, p. 518.

[44] *Mem. S. Edmund's*, I, 223.

[45] *Chronicon Monasterii de Evesham*, ed. W. D. Macray, Rolls Series (London, 1863), p. 108.

In 1207, however, after vigorous protests and even rioting by the other monks of the abbey, the abbot gave in and permitted the two "disturbers of the peace" to return.[46] Master Thomas' death is recorded for the same year.[47]

The Premonstratensian house at Croxton (Leics.) during the reign of King John was headed by an abbot named Adam, who appears to have been a physician of more than local importance, even though physicians in this order are rare indeed. Adam's role as a physician is made known to us solely through a circumstance which brought him to the deathbed of the king at Newark. After his famous surfeit of peaches and cider the king moved from Swineshead to Lafort Castle, thence to Newark, where he became violently ill. The abbot of Croxton was summoned to administer to his physical as well as spiritual needs. Matthew Paris relates that Adam first administered the Eucharist and later attempted to relieve his suffering, remaining in attendance until the king's death. Since John had requested that he be buried in Worcester, the physician performed an autopsy in order that the king's body might more safely be carried to his grave. Carefully salting the viscera, the physician had them transported to his abbey and honorably buried there.[48] Dugdale assigns the dates 1203 to 1220 to Adam's abbacy.[49] The somewhat meager sources relating to the white canons in the twelfth and thirteenth centuries reveal nothing concerning the medical career of Adam, or for that matter, to the medical practice of the Premonstratensians generally.[50]

A troublesome subject, and one with which this present study makes no effort to grapple, is that of the development of the medieval English

[46] *Ibid.*, p. 145.

[47] *Ibid.*, p. 224.

[48] *Chron. Maj.*, II, 668. "Abbas igitur canonicorum Crokestoniae peritissimus in phisica, qui medicus regis tunc temporis extiterat, facta anathomia de corpore regio, ut honestius portaretur, viscera copioso sale conspersa, in sua domo transportata, honorifice fecit sepeliri."

[49] Dugdale, *op. cit.*, VI (pt. ii), 876.

[50] It became apparent as this paper developed that for the religious houses whose chronicles are extensive and comparatively reliable it is possible to identify several physicians, and in some instances even to construct substantial *vitae* for them. St. Alban's and Abingdon are of this group. For others whose literary records are meager or totally lacking, however, not a single physician can be named. This is true of such large and vigorous houses as Reading and Crowland (Lincs.) It is my conclusion that in nearly every large Benedictine house, for the twelfth and thirteenth centuries, at least, there was possibly, even probably, a physician either formally educated for his profession or self-taught. I venture no such conjecture, however, for the Cluniacs, Cistercians, and Carthusians, whose service in England was generally without distinction and whose chronicles are few.

hospital. And yet its importance to the practice of medicine in the medieval religious houses becomes immediately obvious. Three scholars in particular, Miss R. M. Clay, Professor Knowles, and Professor Hadcock,[51] have made significant investigations into this area, but much is still to be done. From the work of these three it is clear that the hospital had various origins and took various forms. Principally, it was a "development from the hospice, . . . and arose from the needs of the most common class of ill-found traveller, the pilgrim, who might fall sick in his journey. sometimes a hospital; in later times it was an almshouse, while many were a combination of two or more of these institutions." [52] The remarkable number of these hospitals, especially those dedicated to the care of the sick and the leprous, leads us to conclude that the care of the ill was a primary concern of many of the English religious houses. "Doubtless many were small, for a dozen inmates or less; doubtless, also, many of them were without any professional medical or surgical attendance. Nevertheless they are an impressive witness to the strength of the desire to give physical help to those in need of it." [54]

The advent of mendicant orders in England provided a vital stimulus to the study as well as the practice of medicine. Both the Dominicans and the Franciscans were amicably received, not only by the well-to-do but also by the poorer classes in the English towns. They soon achieved excellent reputations as healers of physical and spiritual infirmities. The health of the body had been as important to St. Francis as the care of the soul.

> Consciously or not, in the strict injunctions which he gave to his followers to qualify themselves for his order by an attendance upon the leper hospitals and the visitation of the sick, he was fighting against the deadly Manichaeism of the age. But in thus qualifying themselves for working among the large populations of the towns, the friars were forced upon other studies, secondary only in importance to their main concern. Their early attraction to sickness and disease developed in the order those physical studies and pursuits for which they became remarkable.

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[51] Rotha Mary Clay, *Medieval Hospitals of England* (London, 1909). David Knowles and R. Neville Hadcock, *Medieval Religious Houses* (London, 1953), pp. 250-324.

[52] Knowles and Hadcock, *op. cit.*, p. 45.

[53] *Ibid.*, p. 46.

[54] *Ibid.*, p. 47. It is the opinion of these authors that whenever a rule was followed by the hospital staff it was most often that of St. Augustine. Nevertheless "some hospitals were staffed by and under the control of, black monk abbeys, and a few by religious following other rules."

With the friars came the first systematic attention to medical studies and to natural philosophy in general.[55]

And so by establishing themselves in the more squalid sections of the towns and living according to the precepts of their founders, these friars, almost from the moment of their arrival from the continent, became identified with a sort of humble service which endeared them to the suffering poor and won for them the patronage of many persons of wealth. It was natural therefore that with the work of the friars came a sharp acceleration in the study of medicine in England.

Master John of St. Giles, in his later years a Dominican, is an outstanding example of the friar-physician.[56] He is said to have been, in the earlier years of his career, a professor of medicine at the University of Paris.[57] Professor Russell cites evidence to show that he had received his theological degree by the year 1228;[58] therefore he had probably completed his medical study at an earlier date. Trivet records an incident relating to Master John's acceptance of the Dominican habit. He was preaching in Paris on the virtues of voluntary poverty when he suddenly halted in the midst of his sermon, came down from his chair and assumed the habit, and returned to the pulpit to finish his discourse.[59] Some writers have conjectured, without authority, that he had taught at the universities of Paris and Montpellier. He was probably the physician of King Philip Augustus of France, and without doubt he provided medical assistance to Bishop Robert Grosseteste on more than one occasion.[60] In the summer of 1235 he went to Mainz as an attendant of Empress Isabella following her marriage to Frederick II, and in the autumn of the same year he returned to England to report the Empress' pregnancy to her brother, Henry III.[61] Immediately after his return Master John was called to attend Bishop Grosseteste and probably remained with the bishop for a

[55] *Monumenta Franciscana*, ed. J. S. Brewer and R. Howlett, 2 vols., Rolls Series (London, 1858-82), I, xliii.

[56] The sketch in the *Dictionary of National Biography*, X, 883-85, is not totally reliable. See Wickersheimer, *Dict. biog.*, pp. 478-479; also J. C. Russell, *Dictionary of Writers of Thirteenth Century England* (London, 1936), pp. 73-75.

[57] *Mon. Fran.*, I, xliv.

[58] Russell, *op. cit.*, p. 74.

[59] Nicolai Trivet, *Annales*, ed. T. Hog (English Historical Society, 1845), p. 211.

[60] *Matthaei Parisiensis, Historia Anglorum*, ed. F. Madden, 3 vols., Rolls Series (London, 1866-69), II, 38; *Roberti Grosseteste, Epistolae*, ed. H. R. Luard, Rolls Series (London, 1861), pp. 59-62, 132.

[61] *Chron. Maj.*, III, 324.

year or more.[63] There followed other royal appointments and rewards. In 1239 he was called to the court as councillor.[64] Three years later he was in London to assist in the execution of the pirate, William Marsh, Master John himself hearing the confession.

In 1253 Bishop Grosseteste again called Master John to his bedside to treat him in what proved to be a fatal illness. Matthew Paris relates some of the conversations which occurred between the bishop and his physician during these final days.[64] In 1258 John was the physician attending the Earl of Gloucester.[65] The physician himself died in the following year, too late, however, for Matthew to have recorded his passing. Of the large number of medical and philosophical works attributed to John of St. Giles, only a few medical recipes and sermons survive.[66]

Adam of Bechesoures (Hekeshoure), friend and adviser of Bishop Grosseteste, was a Franciscan friar and physician of eminence. Professor A. G. Little names him the chief practitioner among the early Franciscans.[67] It appears that much of his professional career was spent in and around the convent of the brotherhood in Oxford. Most of the information concerning Friar Adam is to be found in the letters of Adam Marsh, whom Sir Maurice Powicke has described as "that busy-body who knew everyone." There can be little doubt that he was well known and respected in the highest court and ecclesiastical circles of his day. Bishop Grosseteste is numbered among his clients, while both Walter Merton, Chancellor of Henry III and later Bishop of Rochester, and Adam Marsh were in his circle of friends. On one occasion Marsh wrote to John of Stamford, custodian of Oxford, asking him to arrange for a poor, sick scholar, Ralph of Multon, to consult Friar Adam. This letter praises his superior skill as a physician and states that he himself had once been treated by Adam with splendid results.[68] Later the great Merton himself came seeking out Friar Adam bearing a letter of introduction from Marsh.[69] In still another case he was besought by Adam Marsh to attend Friar John of Reading, who lay ill.[70] A letter of even later date, written directly to the physician by Marsh, requests medical care for Roger of Kirkby.[71] It should be noted that in no instance is the physician Adam

[63] *Robt. Gross . . . Epistolae*, pp. 60-61.
[64] *Chron. Maj.*, III, 324.
[64] *Ibid.*, V, 400-11.
[65] *Ibid.*, V, 705.
[66] Bodleian MS. 786, fol. 170-1; Peterhouse, Cambridge, MS. 222, fol. 10.
[67] A. G. Little, *The Grey Friars in Oxford* (Oxford Historical Society, xx, 1892), p. 187. For biographical data see Russell, *op. cit.*, p. 1.
[68] *Mon. Fran.*, I, 388.
[69] *Ibid.*, I, 405.
[70] *Ibid.*, I, 370.
[71] *Ibid.*, I, 404.

accorded the title *magister*. Although he lived and practiced in Oxford, there is no evidence that he was ever a lecturer in the University. Nevertheless he is representative of an honorable type of practitioner found frequently among the Franciscans during the earlier years of their residence in the British Isles. He was possibly the author of a treatise, *Libri physicorum*, as well as several commentaries on Aristotelian works.[73]

There is indeed some evidence that Grosseteste himself was a person of eminence in the field of medicine.[74] There is hardly cause to believe, however, that he was ever actively engaged in its practice. Dr. Wickersheimer has collected an impressive batch of excerpts from the letters and treatises of Grosseteste to prove that his medical knowledge was exceptional and his medical advice repeatedly sought. Professor Thorndike, on the other hand, has carefully analyzed Grosseteste's writings for their medical content, and while he does not deny to the bishop some medical knowledge, he concludes that it was in essence a reliance upon magic, charms, astrology and stones.[74] Very probably he is just another example of a renowned ecclesiastic who possessed a medical knowledge uncommon for his time, and as a consequence, was often-times consulted by his friends and acquaintances on the causes and cures of their ailments. With his rare knowledge he doubtless combined acute powers of observation and great intelligence.

Roger Bacon, possibly the greatest of the English Franciscans, could scarcely be called a physician, although medicine claimed his attention from time to time.[75] Like most of the encyclopedists he could not ignore an area of learning which was so challenging, and which, in his opinion, had been so abused and neglected by the scholars of his times. His interest in medicine, though keen, was secondary, and there is only the slightest evidence that he was ever a practicing physician. A number of medical treatises have been ascribed to him, some with certainty, some with doubt.[76] Most of these deal with the retardation of old age and the conser-

[73] Russell, *loc. cit.*

[74] This possibility is explored in E. Wickersheimer, "Robert Grosseteste et la médecine," *Proceedings of the Third International Congress on the History of Medicine* (Antwerp, 1932), pp. 259-262. See also J. C. Russell, "Some Notes on the Career of Robert Grosseteste," *The Harvard Theological Review*, XLVIII (1955), 200-201.

[74] L. Thorndike, *A History of Magic and Experimental Science*, II (New York, 1923), pp. 438, 447.

[75] The literature on Roger Bacon is extensive. Of this, none is more significant than the work of Professor A. G. Little. See his *The Grey Friars in Oxford*, cited *supra*, and the collection of essays of which he is editor, *Roger Bacon Essays* (Oxford, 1914).

[76] A Bacon bibliography together with critical notes is appended to Little, *Roger Bacon Essays*.

vation of youth. They show little originality and reveal Bacon as relying heavily on the authority of certain predecessors, especially Avicenna, in spite of his announced dedication to experimentation (*scientia experimentalis*). More original is the treatise on the errors of physicians (*Tractatus de erroribus medicorum*) in which he criticizes some of the more reprehensible practices among the physicians of his day. As Professor Withington says, "There is, of course, nothing original in finding fault with physicians, but Roger . . . does it in an unusually moderate fashion, and adds much valuable advice culminating in his most characteristic aphorism that, of the three ways in which men think they acquire a knowledge of things, authority, reasoning, and experience, only the last is effective and able to bring final peace to the intellect."[77] Bacon chafed under the restrictions which denied him the practice of medicine—a privilege enjoyed by any common leech outside the church. His medical writings however reflect a practical turn of mind and a reluctance to condemn the practices of those who were permitted some freedom of investigation and experimentation. His *De erroribus*, then, instead of becoming a diatribe against the quackery of his time, is only gently critical of medical practitioners.

Without doubt Roger Bacon helped to rescue medical science from some of the worst abuses of scholasticism. In so doing he prepared the way for later physicians and medical students who, but for him, would have been further encumbered by the scholastic method. His fear of the uses to which the new Aristotelianism was being applied has branded him as a Platonist. His contribution to the science of medicine stems largely from the reverence which he maintained for experimentation, rather than from any practice of the physician's craft.

By the third quarter of the thirteenth century physicians disappear from the lists of monks and friars. Among the host of physicians to King Henry III and Queen Eleanor the name of not one regular clergyman is to be found, though there are many whose reward came by way of ecclesiastical benefice of a secular sort. These facts, on preliminary examination, may appear to be inconsistent with the findings of Professor Knowles, who has shown by the weight of statistical evidence that the number of hospitals under the supervision of the religious orders reached a maximum in the thirteenth and fourteenth centuries only to diminish sharply after the year 1350.[78] A careful examination of the founding dates

[77] *Ibid.*, the essay, "Roger Bacon and Medicine" by E. Withington, pp. 337-358.
[78] Knowles and Hadcock, *op. cit.*, p. 45.

of the hospitals devoted essentially to the care of the sick, however, shows that with few exceptions they were founded in the twelfth and early thirteenth centuries. This leads to two possible conclusions: first, since monastic personnel without question continued to care for the sick in the monastic hospitals, their work was simply less publicized in the face of increasing official restriction; second, increasingly the lay physician was called in to treat the more serious ailments of the hospital inmates.[79]

As to the disappearance of the friar and monk from the ranks of medieval physicians, no single explanation is adequate. In the first place, the official attitude of the church toward the practice of medicine by its clergy became increasingly hostile in the late middle ages. It was almost a paradox from the very beginning that the leading practitioners and students of medicine should have been churchmen. From the early formative days of Christian dogma the church had looked with suspicion on the pagan origins of medicine. It could hardly have been expected to embrace "a profession which looked for guidance to the Moslem Arabians, upon whom had fallen the mantle of the Greek physicians."[80] Nevertheless, in an age which saw the church monopolize all branches of learning, it was not possible for clergymen to avoid an interest in medical matters. Since they were the sole possessors of the skills necessary to interpret and use the medical work of the ancients, they could not escape their role in medical development. The lure of profit was another thing; many churchmen could not resist the chance for material gain. Still others who possessed medical knowledge could not allow the troubled pleas of the ill to go unheeded. And thus it was that in the eleventh and twelfth centuries an increasing number of monks and priests, disregarding their primary vocations, applied themselves to the treatment of disease.

Now the physician's art, especially when applied to persons of wealth and influence, involved great risk, because there was always the possibility that the physician's error would lead to the death of the patient. Were the practitioner a monk or a priest the embarrassment to the order, or to the church generally, could be considerable. Such considerations led to a series of papal and conciliar pronouncements relating to the practice and study of medicine by men of the church.

[79] As, for example, in the case of Master John, a physician at the abbey of Tewkesbury. On December 31, 1248, the abbot granted to Master John twenty shillings a year from the monastic treasury until he could be more copiously provided for from other sources. *Ann. Monast.*, I, 137.

[80] R. Horton-Smith Hartley and H. R. Aldridge, *Johannes de Mirfield of St. Bartholomew's, Smithfield* (Cambridge, 1936), p. 108.

The number of these decrees as well as their repetitious nature leads one to doubt their effectiveness. Professor Knowles is convinced that in England, at least, the prohibitions were never operative.[81] It appears to the present writer, however, that by the middle of the thirteenth century these oft-repeated decrees were nominally observed. Certainly Bacon, as has been shown, felt keenly the canonical restrictions.

The Clermont Council of 1130 was the first to take official action with respect to the problem. The fifth canon issued by that assembly enjoined monks and regular canons against the study of jurisprudence and medicine "for the purpose of temporal gain."[82] This injunction was reissued verbatim as canon six of the Council of Rheims in the following year, and once again as canon nine of the Second Lateran Council in 1139.[83] In these instances it is apparent that the intent of the church body was to prohibit monks and canons from engaging in the study of either law or medicine for professional purposes. There was no inveighing against incidental or private study and practice. The same restriction was issued once more at the Montpellier Council of 1162.[84]

The Council of Tours struck more directly at the root of the matter when in 1163 it forbade the monks to leave their cloisters for more than two months at a time, and prohibited to them the practice as well as the teaching of medicine. It was not until the Fourth Lateran Council of 1215 that similar restrictions were placed upon the secular clergy. Significantly this decree of the Fourth Lateran Council was addressed not to monks, but to deacons, subdeacons, and priests.

That the prohibitions imposed by church officialdom explain in part the disappearance of medical practice from the English monasteries, can hardly be denied. It appears to have been a minor factor, however. A more valid explanation can be found in the rise of the universities offering specialized training and hence turning out an increasing number of trained and licensed physicians. Doubtless too, as Professor Withington has suggested, a part of the answer is to be found in the "increasing complexity of the art."

[81] Knowles, *The Monastic Order in England*, p. 518. Prof. Knowles' observation relates to the period of monastic history prior to the year 1215.

[82] *Sacrorum Conciliorum nova et amplissima collectio*, ed. J. D. Mansi (Florence and Venice, 1759-98), XXI, 438; C. J. Hefele et H. Leclercq, *Histoire des conciles* (Paris, 1907-21), I, 687.

[83] *Sac. Concil.*, XXI, 459, 528. Mansi doubts that a distinction should be made between the canons of Clermont and Rheims.

[84] *Ibid.*, XXII.

NOTES ON THE HISTORY OF GOITER IN SPAIN AND AMONG JEWS*

ISIDOR GREENWALD

The present paper is one of a series on the history of goiter in various parts of the world (1-7).

From these studies, it appears that goiter is, in many countries, a comparatively recent disease. In some areas, it rapidly became quite general and was known as a regional peculiarity, e. g., *Derbyshire neck* in England, *Nithdale neck* in Scotland, *Faluknölen* in Sweden. In many places it became less prevalent and even disappeared. In at least one (Edmonton, Alberta), it later returned and was regarded as a new disease.

I now intend to present evidence that goiter, even as late as the eighteenth century, was known in only a few parts of Spain and that its present prevalence is a recent phenomenon. The second part of this paper deals with the comparative freedom of Jews in most of Europe from goiter until the present century. The connection between the two will be made apparent in the latter part.

I. Goiter in Spain

The evidence concerning the history of goiter in Spain will be divided into two classes: A. that from dictionaries and other general literature; B. that in medical and allied writings.

A. *Evidence from dictionaries and other general literature.*

The proper word for goiter, today, is *bocio* but *papo* is commonly used. The latter usually means the crop of a bird, as does the German *Kropf* and the Italian *gozzo*. *Papera* is now confined to mumps. The history of these words is of interest.

In a dictionary of 1673 (8), there is no *bocio* or *botio*. *Papo* is defined as "lo que cae debaxo de la barba inferior" [that which falls beneath the chin]; *papera* as "la enfermedad del papo" and *papado* as "el papo crecida" [swollen *papo*].

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The Academia Española (9) published its comprehensive dictionary between 1726 and 1739. It contained neither *bocio* nor *botio*. "Papo — la parte carnosa del animal entre la barba y el cuello" [the fleshy part of an animal between the chin and the neck]. "Papada — la carne que crece en abundancia debaxo la barba o la que este entre elle y la pescuezo" [the flesh that grows in abundance below the chin or between it and the neck—in later editions, the chest]. "Papera — la apostema o tumor que se hace en la papada, entre la garganta y la oreja" [the swelling or tumor in the *papada* between the throat and the ear]. Two references were given. One was to the supposed polydactylism and *papera* of Queen Elizabeth of England; the other was to Fragoso (see page 124).

There were a number of official condensations of this dictionary (10). The seventeenth, and (I believe) the last, was published in 1947. The first appearance of *bocio* was in the eleventh (1869), in which it was defined as *papera*. This, in turn, was defined as "tumor que se forma en la papada, hinchazon indolente que a veces adquiere volumen considerable, e indole por le comun escrofulosa" [tumor that forms in the *papada* (see above), an indolent swelling that acquires a considerable volume, commonly scrofulous]. In the three subsequent editions (1884, 1899 and 1914), *bocio* was again defined as *papera* and this as "tumor que se forma en la papada o en otros partes del cuello, desde de la garganta hasta las orejas" [tumor that forms in the *papada* or in other parts of the neck, from the throat to the ears].

Not until 1925, was *bocio* correctly described as an enlarged thyroid. *Papera* then had four meanings: (1) bocio; (2) parotida; (3) tumor inflamatoria y contagiosa que en los caballos jovenes se produce a la entrada del conducto respiratoria o en los ganglios submaxillares; (4) escrofulas, lamparones. [1. goiter. 2. parotiditis. 3. inflammatory and contagious tumor that forms in the entry of the respiratory tract or submaxillary glands of young horses. 4. scrofula (two terms)]. The several meanings of *papera* were continued in 1939 and 1947.

The first appearance of *papo* as "nombre vulgar del bocio en las regiones donde es endemico" [common name of goiter in regions where it is endemic] was also in 1925.

It seems difficult to understand the continued confusion between goiter, mumps and scrofula and the late appearance of a term specific for goiter except as an indication that goiter was rather infrequent in Spain until well into the present century.

The descriptions of the Spaniards given by travellers, native or foreign,

are consistent with this view. I have found few, from the fifteenth to, and including, the nineteenth century that mention goiter. These few were written by persons with medical training and experience and will be discussed later. During these same four or five hundred years, it was quite common, almost usual, for travellers on the French side of the Pyrenees, in Switzerland, in the Tyrol, in the valley of Aosta, to mention goiters and cretins. Some of them also referred to the presence of one or both in their own countries.

A Spanish writer, Pedro Antonio de Alarcon (11) devoted a page to the cretins seen at Martigny (Switzerland) in 1860 without mentioning having seen or heard of goiters or of cretinism in Spain. I have found only one other report by a Spaniard of his travels in Switzerland (12). In 1765, he mentioned neither goiter nor cretins.

B. *Medical and allied literature.*

The Academia Española has begun the preparation of a new dictionary (13) of which only letters A to C have appeared. This gives three early instances of the use of the word *bocio* as found in the translations of writings of non-Spanish authors:[1] Guy de Chauliac (14), Bernard of Gordon (15), and Vigo (16). In the original Latin, each of these had used *boccium* or *botio*, and *bocio* is, presumably, only a copy or a transliteration. The only citation of its use by a Spanish author, not translator, is that by Martin Martinez in 1728. The entire passage from which the dictionary quotation is taken reads:

> Bocio. Suele en esta Glandula embeberse gran cantidad de humor pituitoso, que causa debaxo de la barba un tumor considerable, blando movil, e indolente, que los nuestros llaman *Bocio*, o *Papera*: este tumor es casi endemico en la Saboya, por las muchas crudezas que se engendran en la agua de nieve derritada, que beben en este Pais, ayudando el ayre espeso, y crasso, se coracion pertence, a las obras de la Cirugia. (17, p. 308). [*Bocio.* In this glandular (swelling) there is usually an accumulation of a large quantity of mucous humor, which produces below the chin a tumor of considerable size which is soft, movable and indolent and which we call *Bocio* or *Papera.* This tumor is quite endemic in Savoy, because of the impurities in the water of melting snow, which is used in that country and to the thick air. Its treatment belongs in works on surgery.]

Notable is the absence of any reference to the prevalence of goiter anywhere in Spain.

Examination of earlier writings by Spanish physicians, whether in

[1] These translations are not available to me.

Latin or in Spanish, revealed but few references to goiter. Only a few of the more pertinent ones can be discussed here.

The earliest use of any word that might mean goiter that I have found was in the description by Bueno Gaceo (18) of a manuscript work by Chirino and other physicians of the fifteenth century. This is said to contain the heading "Para la humedad que se hacen paperas" [for the humidity that causes *paperas*]. Unfortunately, there is no immediate way of knowing whether paperas meant goiter, mumps, scrofula, or other disorders.

Moreover, in Chirino's book on medicine (19) published in 1417, there is no mention of either *bocio* or *papera*. We do find "Para la esquinancia y hinchazon de garganta o de las nuezes que dizen, sea con calentura o sin ella, es muy peligrosa." [Quinsy and swelling in the throat or in the Adam's apple as it is called, be it with fever or without, is dangerous.]

I could find no mention of anything that could be identified as goiter by Lopez de Villalobos (20), by Lobera de Avila (21) or by Andres de Leon (22).

Alonso de los Ruizes de Fonteche (23) wrote on the care of pregnant women and compiled a dictionary of 10,000 medical terms used in his book or in those of the many authors from whom he quoted. There is no mention of goiter in his text and, in the dictionary, *bronchocele* is stated to be "una enfermedad que se hazen en el cuello, como potro ernia gutturis" [a disease occurring in the throat as a rupture, *ernia gutturis*]. The dictionary includes neither *bocio, botio, papera* nor *papo*.

Nor could I find anything about *botio* or bronchocele in the Latin of Bravo de Sobremonte (24), of Sanchez (25) or of Michaelis de Heredia (26).

Maroja (27) used the word *botio*, but he seemed to know of its presence only in Brescia and Germany (probably copied from Valleriola, see page 125).

Aside from its mention in the Hebrew of Isaac Caro, to be discussed later, the first indication of the possible presence of goiter in Spain dates from 1570. That edition of Fragoso is not available to me, but in a later one (28) we may read on page 628:

> Deste mismo genero es el Bronchocele que llama Hernia gutturis, y vulgarmente papo, congelase en el cuero y el gaznate, y no se haze (como algunos pensaron) de mar voches vozes, o de beber agua de nieue derretida, segun se usa en algunas partes, sino de la flema gruessa, que poco a poco baxa de la cabeça, por de tras de las orejas. [Of the same kind is bronchocele, called *hernia gutturis*, and commonly *papo*, congealed between the skin and the throat and not due (as some

believe) to using a loud voice, or to drinking water of melted snow, for this is used in some places, but to coarse phlegm which falls, drop by drop, from the head to beside the ears.]

And on page 726 we read:

y assi mismo el Bocium que es un tumor grande en la gargante y por la mayor parte se juzga carnosa [of the same kind is *bocium* which is a large tumor in the throat; for the most part fleshy].

There is no indication that *bocium* and *papo* were identical, that either was endemic anywhere in Spain or even that Fragoso had, himself, seen either.

The same may be said of Calvo (29) who wrote of *bocio* "el vulgo le llama papo" [the common people call it *papo*], but whose description seems entirely copied from others, including the significant (p. 163): "ser el papo algunas vezes enfermedad contagiosa y pestilencial, como los que cuenta Guido" [sometimes, *papo* is contagious and pestilential, as Guido tells us]. Evidently, *papo* was being applied not only to goiter, if to this at all, but to other tumors in the neck, possibly mumps or scrofula, or both. Valleriola was quoted as to the prevalence of *papo* (*botio* in Valleriola) in Germany and Brescia.

However, at about the same time, Dazo Chacon (30), published his book on surgery. *Bocio* was properly distinguished from *parotidas* [mumps] and from *lamparones* [scrofula]. *Papo* was said to be commonly used as the name of the disorder. Among the causes of goiter, Daza Chacon included the drinking of cold and impure waters, as in Ruela and Oregia and in the plains of Lombardy. Ruela is apparently in Lugo in the Spanish province of Galicia. Oregia is not identified with certainty but is probably Orejo in Santander, also in the northwestern part of Spain. No other place in Spain was mentioned.

In the hundred pages devoted to tumors in *Medicine and Surgery* of Juan de Vidos y Miro (31), first published in 1674, there are five and one-half pages on scrofula but no mention of *bocio* or of *paperas*. In the 230 pages of Ayala's *Principios de cirugia utiles* (32), 36 are devoted to *apostemas* [tumors, swellings]. Neither *bocio* nor *papera* are mentioned, but *esquinancia, lamparones* and *parotida* are. The large work on *apostemas* by Pedro Lopez de Leon (32) has two pages on bronchocele, called *bocio*. Valleriola is quoted as to its prevalence in Germany and in Brescia (Italy). The only mention of goiter in Spain is in the record of the removal of a *papo* by Bartolomae Hidalgo di Aquero at Seville in 1657. There was a great deal of bleeding but the patient survived. This

papo may have been a goiter but there is no information as to who the patient was nor from where he came and none as to the prevalence of the disease anywhere in Spain.

Coming to the eighteenth century, we find that Burlet, professor at the University of Paris and chief physician to Philip V of Spain, wrote: "Los tumores duros de los glandules del cuello, la Bronchocele, y Lamparones, tan dificiles de curar, son tan frequentes en los niños, como raros en los adultos, y viejos." (34) [The hard tumors of the neck, bronchocele and scrofula, so difficult to cure, are as frequent in children, as rare in adults or in the aged.] This is certainly not a description of endemic goiter.

A rather different story is given by Casal (35). He distinguished between goiter and scrofula and reported that the former was very prevalent in certain valleys in Asturias, particularly in those of the Lena and Aller. He asked why the disorder should be so common in these and not elsewhere.

The region in which Casal saw the greatest frequency of goiters is close to those from which goiters had been reported by Daza Chacon, 160 years earlier.

Thiery travelled through much of Spain between 1755 and 1760 and in his book (36) he mentioned the diseases he encountered in each province. In travelling from St. Jean de Pied de Port to Pampeluna, in Navarre, he saw no goiters but he attached little importance to this because the territory was so sparsely populated. Goiter was mentioned as prevalent only in Asturias. He obtained information regarding Asturias from Casal.

The latter was also quoted by Townsend (37), who travelled through much more of Spain than did Thiery. He mentioned several diseases in many places in the north and in the south of Spain, but goiter only in Asturias. Thompson had seen a good deal of goiter in England and had treated several cases there (38).

While goiter was common in several places in the northwestern corner of Spain, it was, apparently, of little or no significance elsewhere. In 1751, Suarez de Ribera (39) dealt extensively with a variety of tumors but did not mention goiter. Some years later, Dralet (40), who had travelled extensively in the Pyrenees in 1784 and 1787, wrote of the Pyrenees: "il n'y a presque pas de goitreux sur le versant espagnol" [there are hardly any goitrous people on the Spanish side].[2]

[2] There were many on the French side.

In a seven-volume medical dictionary that was published from 1805 to 1817, Ballano (41) did not list *bocio*. Of bronchocele he wrote:

. . . Esta enfermedad que es bastante rara, daña mucho a la voz y la respiracion, y e propriamente una hernia de la traquiarteria . . . no se debe confundir como sucede con bastante frequëncia, el broncocele con otro tumor del cuello, que se llama *papera* (V. papera y escrofulas). [This disease, though rather rare, does interfere with the voice and with respiration and is really a hernia of the trachea . . . one should not confuse, as is often done, bronchocele with another tumor of the neck that is called *papera* (see *papera* and scrofula].

Unfortunately, while *escrofulas* and *parotidas* were correctly described, there was no entry for *papera*.

The eight volumes of a medical journal published from 1823 to 1832 at Barcelona (in the vicinity of which goiter is now quite common) contained but one indexed reference to goiter. This was in a paper on the treatment of *paperas* by Foderé (42), professor at Strasburg, in which there was a footnote:

Tambien se nota con mucha frequencia esta enfermedad en los Pirineos, en la Cordillera, y en muchos paises montanosos. Es comun en Espana, Baviera, Suiza, Saboya, y sobre todo, segun Heister, entre los habitantes de Tirol. [Also, this disease is frequently noted in the Pyrenees,[8] in the Cordillera, and in many other mountainous regions. It is common in Spain, Bavaria, Switzerland and above all, according to Heister, among the inhabitants of the Tyrol.]

The source of his information regarding Spain was not given. In his well-known "*Traité du goître et du crétinisme*" (43), published twenty-seven years earlier, Spain was not included, although mention was made of the presence of both disorders in the French Pyrenees, in Savoy, Switzerland, and Piedmont.

In the nine volumes of the *Gaceta Medica* (Madrid) from 1845 to 1853 (44), the only indexed reference to *bocio* or to *papera* was to an editorial on the causes of goiter and cretinism, in which the views of Chatin were discussed.

Evidently, there was some interest in goiter and it was present in several places, but it attracted comparatively little attention and, apparently, was rarely severe enough to require medical or surgical treatment.

This is also indicated by an examination of such Spanish journals of popular medicine as are available in the National Medical Library. In *El Monitor de la Salud* etc., for 1860 and 1861, iodine is said to be useful for scrofula, syphilis, white swellings, and cancer, but I found no mention

[8] It had been common for years on the French side.

of goiter in any of the seven volumes from 1858 to 1864, inclusive, nor in *La Salud* (Barcelona) for 1877, in several numbers of *El Guia de la Salud* (Sevilla) for 1884 and 1885, nor in *El Monitor de la Salud* for 1880 to 1885, inclusive.

Examination of the successive Spanish pharmacopeias yields a similar story. The fourth edition (Latin) of 1817 (46) and its Spanish edition of 1844 (47) list carbonized sponge for external use and the latter states that any carbonized animal tissue would yield the same results. The pharmacopeia of 1884 (48) lists a number of preparations of iodine and their uses, but goiter is not mentioned.

In 1856, Mühry (49) published his well-known work on medical geography. In his only mention of goiter in Spain he relied upon Hoffmann (50) who, in turn, mentioned goiter only in Asturias and in Vizcaya, to the east of Asturias. Hoffmann did list other diseases in other parts of Spain, as did others quoted by Mühry.

The pre-eminence of Asturias and Galicia as foci of goiter until quite recently is also evidenced by the fact that Castillo de Lucas (51), in his collection of 3231 popular sayings relating to medicine, has only three, very similar, that mention goiter. These were from Asturias and Galicia.

They were:

a. "El que no tiene papo, non ye guapu"

b. "El que no tiene papo, no es quapo" [Both mean: he who has no goiter is not handsome]

c. "La que tiene papo, tiene guapo" [She who has a goiter is pretty]

The notes to these read:

a. . . . En Asturias, el papo equivales a bocio, y el cuello un poco gruesos, por lo visto, un signo de belleza para los naturales de esas regiones bociogenas . . .

b. Referierse a los bocios, tan frecuentes en algunas aldeas de Galicia y Asturias . . .

c. Refran gallego que aludo al bocio o papera, que segun los naturales de aquello region, realiza la belleza de la qui lo posee . . .

[a. In Asturias, *papo* means goiter, and a slightly thick neck is, so it seems, a sign of beauty to the natives of these goiterogenic regions. b. Refers to goiters, so frequent in some villages of Galicia. c. Galician proverb alluding to goiter which, according to the inhabitants of these regions, increases the beauty of her who possesses one.]

There is some evidence that, by 1868, goiter was fairly wide-spread.

Saint-Lager (52) listed a number of places in which it was endemic.[4] Some of these were quite small districts. It is curious that those known as Batuecas and Las Hurdes, later so notorious for their goiters, were not mentioned by Saint-Lager. It is possible that they were included in the general "mountains of Estramadura, between Spain and Portugal." However, this is not probable.

Batuecas and Las Hurdes are adjoining but isolated. I have consulted descriptions of them and of their inhabitants of 1693 (53), 1784 (54), 1826 (55), 1850 (56) and 1876 (57). The last comprises about 170 pages, several of them on the physique of the inhabitants. I found no mention of goiter in any of these reports.

The first notice of goiter was that of Bide (58), who wrote:

En las tres expedeciones que hicimos, hemos hallado a muy pocos individuos con el *bocio*, al cual llaman *papa* . . . Asi y todo, estos individuos pertenecian a le valle de la Fragosa . . . Mas so algunos bocios hemos advertido, ninguno, sin embargo, se presentaba con los sintomas del cretinismo que acompana a las variedades graves de esta enfermedad, como se ofrecen no pocos casos en Asturias, en los valles de la Lena y del rio de Aller . . . [In the three expeditions that I have made, there were found very few individuals with goiter, which they call *papa* . . . these individuals belong in the Valley of Fragosa . . . But, if some goiters were noted, none, without exception, showed the signs of cretinism that accompany the serious forms of this disease as in not a few cases in Asturias, in the valleys of the Lena and the Aller.]

In 1906, See (59) reported goiter and cretinism in only one valley. Pulido (60), in 1909, saw a great deal of goiter and cretinism. Conditions were bad in 1914, as reported by Unamano (61) and in 1922, by Marañon (62). A more complete survey was made by Vidal Jordana in 1924 (63). There was considerable variation in the prevalence of goiter. In some places, it was infrequent; in others, very common. In 1927, Legendre (64) published his study of the region and its population. He had seen so much goiter and cretinism that he could not understand that Bide had written as he did. That conditions might have changed in 36 years, seemed to be beyond Legendre's comprehension.

By this time (1927), goiter was common in many parts of Spain. In some, it was already diminishing in frequency (Maranon, 65). Another instance of lessening severity was recorded by Draper (66). A combination of increase in some places, particularly in the Province of Granada

[4] Saint-Lager gave Roulin as his authority but the only reference is to a paper which concerns goiter in Colombia. I have not been able to find the source for Saint-Lager's statements.

and diminution in others, especially in Las Hurdes, was reported by Ortiz de Landazuri and associates (67) in 1948. At that time, they were told that there was no goiter in the province of Seville. It appeared soon thereafter and became quite prevalent. The English summary of the paper by Andreu Urra, Rivero, and Stiefel (68) reads:

> Goitre increases progressively in the province of Seville, the increase being more notorious since 1953. Such cases are often observed in the northern valleys of the province, those situated in the Sierra Moreno and its surroundings, Sierra de Algodonales, Ronda and its surroundings, and are frequent, though in a minor proportion, in the villages along the coast of the Guadalquivir river basin and its affluents.

In the same year, Ortiz de Landazuri (69) wrote a long report. The English summary is:

> Investigations performed in four Spanish areas are reported, in which the iodine and calcium rate of water was determined. From these investigations, it is inferred that the characters of the goiter are to be ascribed to additional factors other than lack of iodine.

It is believed that the historical record, as reported in this paper, is in accord with this view.

II. Goiter Among Jews

Curiously enough, there is one reference to what seems to have been goiter in Spain in the fifteenth century. That is in neither Latin nor Spanish but in Hebrew.

In 1497, Isaac Caro, who had lived in Spain and Portugal since his birth in Toledo, about 1445, finally left Portugal for Turkey. In 1514 or 1518, he published his *Toledoth Yizhak* (70) in which he wrote:

> Diseases which befall people are caused by one of the following three agents: 1) heredity . . . 2) place or climate owing to the fact that the water or the air is bad, e. g. . . . the town Buitrago which produces *zephek* among people which is a hard swelling on the *garon* (neck, throat), 3) association and fraternization.[8] . . .

The identification of the Hebrew בויטראגו with Buitrago in Spain seems reasonably certain. It is, however, puzzling that goiter should have been common in this fairly large place, only about 40 miles from Madrid, and yet have escaped notice by others. It is possible that goiter was prevalent

[8] Translation by H. J. Zimmels (71). *See also* (72).

there in the late fifteenth century but that it disappeared soon thereafter as it did later in many other places.[6]

The word *zephek* means the crop of a bird and in using it to denote a swelling in the neck, Caro was only doing what people in many parts of the world have done, cf. Spanish *papo*, German *Kropf*, Italian *gozzo*, etc.

It is noteworthy that Eliezer ben Yehudah, in compiling his *Thesaurus* of Hebrew (76) also used *zephek* to mean goiter and gave this passage from Isaac Caro as his only authority for doing so. Masie (77) derived from it the more specific term *Zappeketh*.

If this use by Caro is the only mention of goiter in the vast Hebrew literature up to the present century, it would seem to indicate that goiter was rather rare among Jews.

This inference is suggested by other considerations. In 1776, Read (78) found that, although there was a great deal of goiter in the city of Metz, there was but one woman so affected in the Jewish quarter. A similar state of affairs, in the same city, was reported by Brault in 1827 (79). Indeed, according to Boudin (80), the Medical Society had, at about that time (1827), raised the question, "Why are Jewish women exempt from goiter?"

One hundred years later, Taylor made a similar observation in Manchester, England (81). "It seems clear that the endemicity among the Jewish children is low when compared with the prevalence among Gentiles living in the same neighborhood attending the same schools and drinking the same water." (The parents of the children were mostly recent immigrants from Russia.)

The immunity is certainly not absolute and, in some places, is nonexistent. Thus Valentin (82), in 1825 (1824?), found that 70 out of 1777 Jews in the ghetto of Turin, had goiter. In 1910, Flinker (83) found a great deal of goiter and cretinism among Jews in certain parts of Bukowina and stated that it had been endemic there for decades.

In 1932, Abbott (84) reported that goiters were more frequent in the children of Ruthenian parentage in the schools of Winnipeg, Manitoba, than in those whose parents came from other parts of Europe. (Ruthenia and Bukowina are adjacent former portions of the Austro-Hungarian Empire.) The Jewish children came next to the Ruthenians, with Polish and Russians not far behind. Probably, most of the Jewish children, or their parents, came from that same general area where present-day Czecho-

[6] Cf. Hirsch (73), Osler (74), Greenwald (1), Krueger and Armattoe (75).

slovakia (Ruthenia), Romania (Bukowina), and Poland meet. However that may be, it is clear that the Jewish children were not immune.

Summary

The history of goiter in Spain has been reviewed. It has been shown that there was a great deal of confusion between goiter, mumps, and scrofula that persisted in most of Spain until well into the nineteenth century. The first reference in Spanish or Latin literature to the endemicity of goiter anywhere in Spain was to its existence in the northwest corner of Spain in the latter part of the sixteenth century. Apparently, it was endemic only in certain places there, and nowhere else in Spain, with one exception, until the nineteenth century. The one exception is to be found in a Hebrew reference to its presence in a city about forty miles north of Madrid in the latter part of the fifteenth century.

With that one exception, Jews seem to have been comparatively free from goiter, even when they lived in goitrous regions, until quite recently. They are not immune. It is suggested that they were protected by the scarcity of contacts with goitrous neighbors. Once the group was affected, the disorder became established among Jews, as among others.

How are we to reconcile these conflicting bits of evidence? They are only bits but they seem to fall into a pattern. The author has, in other places (1, 2, 3, 4, 5, 6) shown that the history of goiter is that of an infectious disease. He now suggests that the disorder resembles leprosy in that it is not, ordinarily, readily communicable but, generally, requires prolonged exposure. (Goiter, at least, is sometimes more readily acquired. Epidemics have been reported repeatedly; some quite recently.)[7] Such prolonged exposure probably existed in fifteenth century Spain but nowhere else in Western Europe then, or in the following four centuries.

The endemicity of goiter may be due to the presence of a carrier of limited range.

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[7] Cf. Hirsch (73), Anglesio (85).

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ROUANET OF PARIS AND NEW ORLEANS

Experiments on the Valvular Origin of the Heart Sounds 125 Years Ago*

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Pulmonary disease was Laennec's first love. The heart was slighted, relatively speaking. Furthermore, Laennec was a morphologist and like many morphologists, found it difficult to think in physiologic terms. Morbid anatomy was in his time the only solid foundation for pathology; yet heart sounds and murmurs are so intimately related to cardiac *physiology* that morphology alone cannot suffice in their interpretation. Thus Laennec (1) attributed the first sound to ventricular systole (*bruit ventriculaire*) and the second to atrial systole (*bruit auriculaire*). Laennec considered the heart sounds sonorous vibrations which develop in the heart muscle fibers with contraction. Because of this confusion Laennec was never able to relate murmurs accurately to lesions of particular valves. Furthermore, so often did he find no anatomical lesion in patients who had displayed a murmur in life that he concluded in his second edition (1826) that a spasmodic contraction of the heart is responsible for most, if not all, murmurs (2).

The snarl in which Laennec left the subject of cardiovascular sound was untangled to a considerable extent by Joseph Rouanet. Born in 1797, Rouanet devoted his M. D. thesis[1] of 1832 to "An analysis of the heart sounds" (3).

In the introduction of his thesis Rouanet set the following topics for discussion:

> 1) I will briefly review what has been published on this subject; 2) I will show that action of the heart valves is accompanied by sound; 3) that these sounds coincide with those of the heart, and that in granting that these are the same one provides perfect explanation for the observed facts; 4) that no existing theory is admissible; 5) I shall end with certain considerations of the orifices and valves of the heart and abnormal sounds.

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[1] A copy loaned by the National Library of Medicine was used. In the Rudolph Matas Medical Library of Tulane University, there is an autographed copy presented by Rouanet to the Library of the School of Medicine of New Orleans on July 3, 1852 (27).

In 1828 John William Turner (1790-1836), who was professor of surgery at Edinburgh, had challenged (4) Laennec's theory of the atrial origin of the second sound merely by recalling that Senac, Lancisi, Haller, and others had known the atria contract just before the ventricles, not afterward. Writing in the first edition of his textbook of cardiology in the same year as Rouanet's thesis appeared, James Hope (1801-1841) of London related the second sound to attainment of the full diastolic capacity of the ventricle. Also in 1832 (16) Archibald Billing (? -1852) of London attributed the heart sounds to tensing of first the ventricular, then the arterial heart valves.[2] Although correct in his conclusions, he seems to have arrived at them by intuition.

Rouanet's experiments consisted first of the use of a model in which ventricular action could be simulated and valve-action including the production of sounds studied. In a second type of experiment Rouanet related the character of sounds produced by tensing membranes to the physical properties of the membrane and compared the sounds so produced to the heart sounds.

In the following manner Rouanet described the experimental procedure which he used in connection with both the pulmonary and the aortic valve (*see* Fig. 1):

> I put the part below the sigmoid valves around a glass tube about an inch in diameter and 2 or 3 inches long, joining below a bladder similarly fixed to it and full of water. The portion of the vessel above the valve was fixed to the lower end of a second tube of the same diameter and more than four feet in height, in order to compensate, by the elevation of the liquid column, for the forces of impulsion which normally exist, be it on the part of the blood, or of the arteries and the neighboring parts. Then seizing the apparatus at the level of the valves which remain free, and applying my ear, in such a manner that it is separated only by the fingers, I would squeeze the bladder suddenly with the other hand; I would imitate insofar as possible the beating of the heart, as to the quantity of liquid which I made pass into the upper tube with each beat, and as to the intermittence of the action which I exercised on the bladder. At the moment when my fingers, which had just squeezed the bladder abruptly, relaxed to let the liquid descend, a very marked shock would strike my ear; it was audible as often as I repeated compression of the bladder. Its force was in proportion to the height of the fluid column. It was very analogous to the second sound of the heart. I say "analogous" and not very "similar"; surely no one would expect to find a perfect resemblance here since the conditions are so different . . . the pulmonary artery . . . has been submitted to the same experiment with the same results.

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[2] The prize of the century for comprehensive titles is certainly due Billing's: "On the auscultation and treatment of the affections of the heart"—all in an article 3½ pages in length!

The following paragraph summarizes Rouanet's thoughts about the origin of the heart sounds:

Let us hasten to add that an impact, such as one hears in everyday experience and which results from the collision of two bodies, is not the only cause of the

FIG. 1.
Modern artist's conception of Rouanet's experiment, as performed on the right side of the heart.

valve sound. Rather numerous experiments have shown me that all membranes, in passing suddenly from flaccidity to tension, always produce a sound which varies according to the circumstances. Its intensity is in proportion to the force which distends the membrane. Its *éclat* increases with the thinness and inextensibility

of the tissue which composes it. [Increase in] the size, thickness, and extensibility of the membrane render[s] the sound more dull. The body to which it is attached also influences considerably the qualities of the sound, by its thickness, softness and elasticity.

Rouanet was convinced of the valvular origin of the first sound, as well as of the second, for he wrote further:

In their texture and action, the auriculoventricular valves combine the most favorable conditions for the production of sound; they are thin, resistant, inextensible; they pass in an instant from the most complete flaccidity to sudden and violent distension, resulting from the impulse of the blood and the traction of the numerous tendons which pass from their margin and ventricular face to attach at the apex of several carneous columns. Consequently, whether we consider in the valves a surface which goes to strike abruptly against another surface, or whether we see in it an eminently sonorous membrane, subjected to a strong and instantaneous force, we are obliged to agree that it should produce a sound perceptible to the ear.

Rouanet's view, stated in 1832, coincides with the present day one: That the production of sound with the coaptation of heart valves is more a matter of tensing of the valve-membranes than of collision of the cusp margins.

Rouanet states that, confronted with weakness of the first heart sound, "we should look into whether ventricular systole lacks vigor and whether the large valves close their orifices incompletely." He cites a case in which, although the apex beat was of large amplitude, the first sound was soft, and at autopsy ossification of the mitral valve was demonstrated. Thus he recognized the dull and muffled first sound of mitral regurgitation.

Rouanet on Murmurs

Rouanet then discusses murmurs. He asks himself the question "Can we now recognize which of the four orifices of the heart is the site of the abnormal sound?" and proceeds to demonstrate that he can. He states: "Two circumstances serve to tell us: The time in the heart rhythm when it is heard and the area of the thorax where the ear perceives it most distinctly." His description of the signs associated with stenosis and regurgitation of each of the valves is accurate and reads like a chapter from a textbook of physical diagnosis. Once he had the map, passage across this treacherous terrain was relatively simple and sure. After reading his exposition one does not wonder that he was subsequently noted as a cardiac diagnostician.

Although it did not interfere with his physic, Rouanet's understanding of the physics of murmur production was imperfect. He thought murmurs were produced by friction (*frottement*) of the blood on the orifices, narrowed or normal, of the heart.

By 1829 (5) Dominic John Corrigan (1802-1880) of Dublin appears to have had a clear notion of turbulence and the production of murmurs, not at, but beyond, a constriction. In 1832, Rouanet's fellow Parisian Félix Savart (1791-1841), physician-turned-physicist, was just beginning the experiments on flow-models which were to result in the description (6) of "fluid veins" (what we might call eddies, vortices, or even turbulence), which were to be referred to in discussion of murmur-genesis during the rest of the century. Rouanet demonstrated a sounder conception of the genesis of murmurs in his second publication twelve years later (see below). However, more accurate understanding of the physics of murmurs had to await the application of Savart's theories to the biological situation by Chauveau (1829-1917), the Lyons veterinarian, in the late 1850's (7); the studies of Kiwisch (8) and of Weber (9), also in the 1850's; and finally the analysis of factors resulting in noisy turbulent flow, as opposed to relatively silent streamline flow, by Osborne Reynolds (1842-1912), engineer of Manchester, England, whose article appeared in 1883 (10).

The Reception of Rouanet's Work

After 1832, although Rouanet's work became reasonably well known,[8] his theory of the heart sounds was by no means generally accepted. To the very present there have been those who are unconvinced of the valvular origin of the first heart sound. On February 3, 1834, the great Magendie (1783-1855) read a paper before the Academy of Sciences entitled "Mémoire sur l'origine des bruits normaux du coeur" (11). In it he presented observations which he interpreted as evidence for his theory that both major heart sounds are due to impact of the heart against the thoracic

[8] The wide dissemination of information about Rouanet's work is illustrated in an amusing manner (which is also revealing as to the editorial practices of the day) by the review of his thesis which appeared in the *Western Journal of Medicine and Physical Sciences* in 1833 (17). The review begins: "Dr. Bouanet [*sic*], in an ingenious thesis, explains the phenomena of the two sounds in the following manner." The reason for the error in spelling his name is evident from the credit line which states that the review was taken from the *American Journal of Medical Sciences* (Philadelphia), which had taken it from the *Medical-Chirurgical Review* (London), which had taken it from No. 97 of *Journal hebdomadaire* (Paris). Despite the fourth-handed nature of the review a reasonably accurate account was provided.

cage: the first sound with contraction of the ventricle, the second sound with diastolic filling of the ventricle. His "evidence" (which is clearly susceptible to other explanation) was as follows: He could hear no sounds when the hearts of animals were exposed, except for sounds he attributed to impact of the heart against the monaural stethoscope. Fluid or air about the heart reduced the intensity of the heart sounds. The intensity of the sounds seemed to be related to the force of the cardiac contraction. With one fell swoop he purports to dispose of Rouanet's theory: "This explanation is physically inadmissible; it supposes the existence of a void in the ventricles and two great arterial trunks." He was criticising the fact that Rouanet had snapped membranes in air. It it not clear how Magendie accounts for Rouanet's observations which were performed on excised hearts with simulated ventricular systole and which related specifically to the second sound. Magendie's principal objection is removed by recent experiments by Dock (12) who tensed membranes under water and recorded vibrations resembling the heart sounds.

Jean-Baptiste Bouillaud (1797-1881) presided at the session of the Faculty of Medicine on August 31, 1832, when Rouanet presented his inaugural thesis. Furthermore, Bouillaud was ever a stalwart supporter of the Rouanet theory. In the second edition of his *Traité des maladies du coeur* (1841) he wrote as follows: "The discovery of this theory redounds infinitely, in my opinion, to the honor of the powers of observation, as well as the philosophic mind of M. Rouanet." In 1844 in his *Manuel d'auscultation* (p. 376) Andry, formerly *chef de clinique* (chief resident physician) on Bouillaud's service at the Charité wrote: "M. Bouillaud is, as you know, of all clinicians, perhaps, the one who has contributed most to the support of the theory of the valvular *claquement*." In 1864, when the discussion of the origin of the heart sounds was revived in connection with the experiments of Chauveau and Marey, Bouillaud stated (18): "It is impossible, with normal senses and a sane head, not to admit the theory of the valvular *claquements*" (*Union méd.*, Apr. 28, 1864). On another occasion, he commented as follows: "Since M. Rouanet showed that the heart sounds are due to snapping of the valve, it is necessary to renounce all other explanations which have been given before. What proves the truth of his doctrine is that the destruction of the valves causes all sounds to cease. Every day Nature, in the wards of our hospitals, performs this experiment on a grand scale. There is not a single valvular lesion, whatever it may be, which does not produce an alteration of the sounds" (*Union méd.*, June 14, 1864).

Rouanet's Second Publication on the Heart Sounds

In 1844, in connection with the publication of Félix Andry's *Manuel de diagnostic des maladies du coeur* (1843), Rouanet was invited to present a critical survey of the subject of the genesis of the heart sounds before the *Société de Médecine de Paris.* This second work was published in the same year in the third volume of *Revue médicale.* Like his first publication, this second is closely reasoned and lucidly written. Possibly the judgments expressed are more mature. However, except in connection with murmurs, the conclusions are not substantially different.

In the introduction Rouanet wrote: "The question of the physiological heart sounds, which has been the object of so many researches and which has received more than thirty different solutions, is based on four basic elements variously combined: 1) the muscular sound; 2) the friction of the blood; 3) the shock [impact on the chest wall]; 4) the valvular snap." He then proceeded to present the evidence that only the fourth is tenable. He reviewed the experiments of the so-called Dublin committee (of the British Association for the Advancement of Science), Hope, Williams, and others.

Proof of the valvular origin of the heart sounds is of three types, he stated: physical, physiological (or physico-physiological) and clinical. The *physical proof* consisted of the tensing of membranes with production of sounds resembling the heart sounds. He quoted observations of one Gavard as indicating that the results are the same when the experiment is done under water, although the sound is duller. "It corresponds to a lower note in the musical scale. . . . The difference is approximately four tones."

The *physiologic proof* is provided in part by the type of experiments on excised hearts such as he mentioned in his thesis of 1832. He described in this work of 1844 an apparatus with which he succeeded in imitating the function of both the mitral and the aortic valve:

> The apparatus I most often use is composed of two reservoirs communicating with the heart by tubes. The lower reservoir, designed to furnish the liquid, is raised 3 or 4 centimeters above the organ; its tube connects with the left auricle. The second tube 2 to 2½ meters long, connects the aorta to the higher reservoir, of which the capacity, like that of the first, is 8 to 10 liters. At the apex of the heart is fitted a third very short tube which carries below a caoutchouc bulb. . . . If one opens the tap of the lower reservoir, the water enters the heart and rises on the side of the aorta, after having filled the rubber bulb and ventricle.
>
> To produce valve action, it is only necessary to imitate systole and diastole by

sudden compression and release of the rubber bulb. The first of these two movements causes the bicuspid *claquement* to be heard; the second, the semilunar *claquement.*

Rouanet despaired of experiments in the living animal. He pointed out that the English workers had succeeded by vivisection in confirming the valvular origin of the second sound but not of the first. "The conclusive experiments on the ventricular valves are of almost insurmountable difficulty." It remained for Chauveau and Faivre (19) to make the critical physiologic observations, particularly those in which the finger was introduced into the atrium of the living horse and the play of the ventricular valves correlated with the heart sounds.

The type of observations which were marshalled by Rouanet in *clinical proof* of the valvular origin of the heart sounds is illustrated by the following remark: "Sometimes the valves, without significant increase in thickness, lose their pliability and become indurated. The sounds then become hard, dry, and as M. Bouillaud puts it, parchment-like [parcheminé]."

A bit of sarcasm, directed at Magendie, can be detected in the report of 1844. Who, he asks, has provided evidence that the shock of the heart against the chest wall does not produce the heart sounds, as Magendie had insisted? "It is not I, gentlemen; it is M. Magendie himself. In a recent experiment, he raised the sternum of a dog, wrapped the heart in cotton, then applied a stethoscope to the organ thus cushioned and heard clearly the *tic tac* of the heart."

Finally, after twelve more years spent in the study of cardiovascular sound, Rouanet had arrived at a more accurate theory of the cause of murmurs. He insisted in 1844 that it is in the formation of eddies, vortices, or turbulence that their basis is to be found. The word he used, *tourbillons*, is note-worthy: "It is almost superfluous to remark on the facility with which turbulence (*tourbillons*) and murmurs are produced by abnormal dilatation of the arteries, stenosis of orifices, the presence of blood clots, and the insufficiencies."

Biographical Sketch[4]

Joseph Rouanet was born on December 4, 1797. His place of birth is recorded as Saint-Pons (Hérault) in southern France. Actually he was born at Brassac, a nearby village which was located in the same parish as Saint-Pons. His father, Mathieu Rouanet, was an illiterate peasant; his mother, Catherine Cros, was probably also illiterate. There were eight children in the Rouanet family, five girls and three boys; Joseph was the fourth child.

On October 1, 1799, Mathieu Rouanet became the farmer of Chapetis, an estate in the mountains above Brassac. In 1790 Pierre-Jean-Joseph Pradal had become proprietor of Chapertis through a gift from Mlle. Thérèse Tabarié, aunt of his wife. Because of his precocious intelligence, Mlle. Tabarié became interested in the young Joseph. In preparation for an ecclesiastical career, she had him educated in the schools of Saint-Pons,

[4] In preparation of this biographical sketch information from several published and unpublished sources has been used. 1. In 1866 Caffe, editor of *Journal des connaissances médicales*, published an obituary (14) based on information provided mainly by Faget. Born of French parents in New Orleans, Jean-Charles Faget (1818-1884) was doctor of medicine from the Faculty of Paris (1844). He is noted mainly for his study of fever with the thermometer and watch (20). Specifically, he noted that in yellow fever the pulse is likely to be falling at the time in the first 24 or 36 hours when the temperature is rising. Osler (21) wrote as follows: "This important diagnostic feature was first described by Faget, of New Orleans." 2. Faget himself provided (18) an intimate account of Rouanet's personality and his career in New Orleans where they were professional colleagues. Furthermore, he reviewed Rouanet's second memoir on the heart sounds (1844). 3. In 1877, Dechambre (15) in his medical encyclopedia published a biography of Rouanet prepared by Beaugrand. 4. In 1910, Berthaut (28), a physician born in the same commune as was Rouanet, wrote a biographical sketch based particularly on a group of Rouanet's personal letters. This biography is particularly illuminating in connection with the first 35 years of Rouanet's life, just as Faget's (18) is of the last 20. Least specific information is available about the period from 1832 to 1846. 5. In 1922, E. Souchon (13) of New Orleans stumbled on the tomb of a Dr. Pierre Rouanet in the cemetery of the Louisiana town of Thibodaux. He wrote a tribute to the man, referring to him as "the discoverer of the cause of the heart sounds." Pierre Rouanet was clearly a different Dr. Rouanet: He was born in the Department of Tarn in France, lived from 1787 to 1849, and was already in New Orleans in 1828 at which time he was married. To complicate matters further, a son of Pierre, William Pierre Rouanet (1820-1853), was also a physician. Souchon patched together a biography which used some of the details of Pierre Rouanet's life and some of Joseph Rouanet's as given in Caffe's obituary. 6. In 1932, in reviewing the nineteenth century French language literature of Louisiana, Tinker (23) described the poetry of Dr. Charles-Chauvin-Boisclair Deléry (1815-1880). He also described in fair detail the episode of "Le médecin et l'oie." 7. In preparation for a history of medicine in Louisiana the late Dr. Rudoph Matas (1860-1957) collected many details on Rouanet's life in New Orleans: His medical publications, where he lived, the newspaper announcements of his death and funeral, etc.

and taught Greek and Latin by an old Franciscan monk, Father Valleton. Sometime between 1815 and 1820, Joseph went to Paris and entered a seminary, possibly Saint-Sulpice.

However, Rouanet soon renounced his plans to enter the priesthood and undertook earning a livelihood by tutoring in the dead languages. He had not yet attained a university degree, for it was not until June 15, 1829, that he received the degree of bachelor of letters.

Paul Pradal, younger son of the proprietor of Chapertis, was an intimate friend of Rouanet. It was to Paul that Joseph addressed the letters which Berthaut used in preparing his biographical note (28). The letters had a tone of familiarity and camaraderie with no suggestion of the deference which the farmer's son might feel toward the proprietor's son. Since Paul was only five years Joseph's elder, the two had probably played together and attended the same schools in Saint-Pons.

In 1824, while Rouanet was teaching in a boarding school in Choisy-le-Roi, he spent the vacation months of August and September on a walking tour of Normandy. The letters to Paul Pradal described many amusing episodes of this holiday trip.

Rouanet appears to have studied medicine formally from 1828 to 1832. However, the letters to Paul Pradal give evidence of a certain amount of medical knowledge which he had previously acquired, presumably through reading. For economic reasons he took longer for his medical education than would otherwise have been necessary. Beginning in 1826 he was secretary to the Princess of Talmont; later he combined this role with that of personal physician to the princess.

The story of Rouanet's experiments on the origin of the heart sounds, culminating in his thesis of 1832, has already been told. After qualifying as doctor of medicine he took up the practice of medicine in Paris. Little is known of the next fourteen years other than that he continued his live interest in cardiovascular sound (witness, the report of 1844), and in practice failed "to enlarge the circle of his clientele" (15). It was for this reason that he emigrated to America in 1847. The writer of an obituary (14) provides a further, although not necessarily mutually exclusive, explanation for his emigration: ". . . some heavy speculations in the stock market forced him to transfer his incontestable medical talents to America; and it was from there that without any legal obligation he sent to his friend Dr. Raymond funds to pay debts which he believed he still owed his stockbroker—a very exceptional example of business fairness."

In the *Registre du Comité Médicale de la Nouvelle Orléans* (1816-1854, p. 170) it is recorded that Rouanet's credentials were examined at the meeting of October 30, 1847, and a license to practice issued (22).

Autopsy-confirmed accuracy in the diagnosis of the case of Dr. C. A. Luxenberg helped establish Rouanet's reputation in New Orleans. Luxenberg's biographer wrote that in the Spring of 1848 "Dr. Luxenberg's health began to fail suddenly. . . . The worst fears of his medical friends were now excited, and their diagnosis confirmed with an accuracy of the school of Corvisart, by M. Rouanet from France, recently arrived in the city, who pointed out the precise location and character of the disease, which . . . was verified by the autopsy" (24).

In the 1848 edition of his *Traité pratique de la fièvre jaune* (25), Thomas made several complimentary references to Rouanet, including the following: "I heartily applauded the ingenious idea of Dr. Rouanet (distinguished French physician who only a few months before had settled in New Orleans and begun work at the hospital), when he proposed strychnine which he employed in several cases with marked success."

Rouanet contributed many articles to the *Union médicale de la Louisiane* and the *New Orleans Medical and Surgical Journal* (29-33). In 1852 he wrote a lengthy review and discussion of Professor W. H. Walshe's *Practical Treatise on the Diseases of the Lungs and Heart* (26). Several open letters to his professional rival, Dr. Deléry, also were published (34-36).

Rouanet was in New Orleans at the same time as the peripatetic Austin Flint (1812-1886). We can only speculate as to the associations they may have had, based on their mutual interest in cardiovascular sound and physical diagnosis.

An intimate account of Rouanet's personality and his career for twenty years in New Orleans is provided by his friend and colleague Dr. Jean-Charles Faget (18):

> Rouanet, an old bachelor of great sobriety, led almost the life of a monastic. His apartment[6] consisted of a single large salon. Before I could discover where he slept, it was necessary for him to get sick: It was in one corner of the large room, on a simple couch covered during the day by a sort of carpet, and resembling a piano or some such thing; this at night became the anchorite's cot. I saw him a long time, hemiplegic, stretched without a mattress on this couch which was too narrow for him, obstinately refusing to exchange it for any sort of bed.

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[6] Gardner's New Orleans Directory informs us that Rouanet lived at 124 St. Louis Street (22).

Like most of our colleagues, I met hardly any heart affections in my clientele without calling Rouanet in consultation. Since our consultations were almost never followed by autopsies, I cannot say with certainty to what extent his diagnoses were accurate. Naturally, in such matters, I had infinitely greater confidence in him than in myself. Once when I called him only after having thoroughly studied my patient and become certain of my diagnosis, he did not wish to declare himself; at subsequent meetings, he still desisted; finally, when he saw that I was really annoyed, he said to me: "Don't you see that it is to humor you? Two opinions are not possible here." I tell this because it shows very well one of the traits of his character. Rouanet was a tease and wag, but without malice, simply for humor's sake.

One day, for reprisal, a young colleague wished to have a joke at Rouanet's expense. He brought to Rouanet's house, very gravely, an anatomical specimen, saying it was an infant's heart which showed most singular anomalies. It seems that Rouanet studied them with much curiosity.

But, it was the heart of a goose. I do not know to what extent Rouanet was deceived by it. What is certain is that he took it very poorly. This impropriety, or more this thoughtlessness, had wounded him in a sensitive spot! Another colleague made the mistake of recounting the episode in a bit of doggerel verse which circulated about town. This was too much! A duel with pistols ensued. Happily, after the first shots, which grazed both of them, the witnesses, some serious colleagues, declared honor satisfied. Rouanet wished to begin again.

Further details on the episode of the goose heart and the ensuing duel are provided by Tinker (23). It was Rouanet's long-time rival Dr. Charles-Chauvin-Boisclair Deléry (1815-1880) who composed and circulated the poem entitled "Le médecin et l'oie."

Faget's biographical note continues as follows:

. . . I have always regretted that, after the discovery of his theory of the heart sounds, he did not devote himself to surgery. With his ingenious, inventive and patient mind, with his admirable sang-froid, his prudent audacity and his dexterity, he would have made from the beginning a very brilliant operator and perhaps he would also have contributed to the instrumental arsenal of surgery. I have many times assisted Rouanet in delicate operations: strangulated hernias, ablation of tumors, tracheotomy. . . . He conducted himself like an accomplished surgeon. Furthermore, I do not believe I ever saw him arrive for an operation without bringing with him a small instrument invented that day for the case at hand. He had his own cannula for tracheotomy. . . . It was in fact while caring for an infant on whom he had performed this operation that he was stricken, to rise no more. It was in the first months of last year [1865]. I had not seen him for a rather long time. When he came to take me for the operation, I was struck by the changes which had occurred in him. He was now an old man with heavy and dragging step. . . . He acquitted himself well in the operation and wished success at all cost. It was a distinguished family to which he was particularly attached.

Night and day he himself watched over the infant, without consenting to leave for a single instant. One morning, they came to beg me to replace him; it was necessary to carry him home.

I found him stricken by hemiplegia and the tongue so embarrassed there was no way to tell what he wished to say. Nonetheless, perfectly calm, smiling, trying still to joke and laugh. Always on his carpet-covered bed, in his one huge salon!

. . . Despite his hemiplegia, he preserved his perfectly keen intelligence and even his teasing gaiety. When I left him in April [1865], his speech was sufficiently articulate to be easily comprehended. Since, I have learned of his death, which must have been that of a good Christian.

The *Nouvelle-Orléans Bee* (p. 1, column 6, July 22, 1865) noted Rouanet's death on July 20, 1865 (22). According to the city records, death occurred at 2:30 a. m. at the Hôtel Dieu. A funeral service was observed at the St. Louis Cathedral on July 27 (*Nouvelle-Orléans Bee*, p. 1, column 4, July 26).

Faget, Rouanet's colleague, friend and biographer, suggested that Rouanet's elucidation of the heart sounds ranks with the observations of Haller on the movements of the heart and even with Harvey's on the circulation of the blood. Certainly his contribution, amplified and applied in the clinic by Bouillaud and his students, had important practical significance for the clinical diagnosis of heart disease, whether or not it was fully appreciated at the time.

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THE ASIATIC CHOLERA EPIDEMIC OF 1833 IN MEXICO

C. A. HUTCHINSON

(*Concluded*)

Cholera had been ravaging the states of Mexico, both north and south, since May, and some residents of Mexico City had been asking themselves what would happen when it broke out there. Mexico City was estimated to have a population of between one hundred and fifty and one hundred and eighty thousand, and was the largest city in the land.[114] The poor living conditions of the masses in the city made people fear for the worst: "Should the cholera unfortunately make its appearance in this Capital," the British Minister wrote his government, "we may anticipate the most dreadful effects amongst the lower orders of the population on account of their disorderly lives, poor nourishment and filthy damp habitations."[115] It has been mentioned above that on March 15 the Mexico City Council issued a set of regulations for a clean-up campaign, and a month later Vice-President Farías impressed on city authorities the need for more activity in making preparations for the coming of cholera. But unfortunately in May the government found itself faced by two scourges, cholera at Tampico and revolution at Morelia—and the revolution reached the capital first, causing further delay in cholera preparations.

On June 18 the committee appointed by the city council to make recommendations for sanitary measures to combat cholera began its report by lamenting the "sad abandonment" that it observed in the campaign to clean up the city. It reaffirmed the need for the campaign, and suggested that a paid inspector should be appointed for every city block who should have the power to enter houses and patios as well as food and liquor stores and see that they were clean—if they were not, the inspector should be able to levy fines from a peso to ten pesos. The committee also made some suggestions for looking after those who were taken sick: each ward of the city should have two first-aid centers completely furnished with the necessary drugs and equipment, and there should be on duty in every ward at least two physicians with four assistants and two servants paid from public funds. After he had seen a doctor and received a prescription, the patient was to take it to the apothecary selected by the councilman,

[114] Pakenham to Palmerston, Sept. 11, 1833, FO.50/80A, PRO; Henry Tudor, *Narrative of a Tour in North America* (2 vols., London, 1834), II, 229.

[115] O'Gorman to Bidwell, June 10, 1833, FO.50/80B, PRO.

where he could have it filled free of charge. If the patient needed further attention in one of the first-aid stations, he could arrange to have it.[116]

When, in the course of the first week in August, Vice-President Farías was informed that cholera had appeared in Querétaro, some 170 miles north of Mexico City, he had the above committee's suggestions before him, and also the recommendations of physicians whom the government had consulted. The regulations issued by Farías on August 7 make some additions to the committee's suggestions, but otherwise are similar to them. One change was that the inspector, who was now called a commissioner, was to perform his duties without pay. Another was that the poor patients in each ward were to be put under the care of the councilman for the ward, who was to see that they received the medical care, medicines, and meals that they needed. Every councilman was to select a house in which meals were to be prepared for poor patients. Instead of stating that two doctors were to be allotted to each ward, the regulations more realistically called upon the municipal sanitary council to divide up what physicians there were between the different wards, where they were to give their services free of charge to poor patients. Six institutions were to set up hospital wards for the poor or for strangers who had nowhere to go for help. Bell ringings, such as the tolling for the dying, or any other tolling that might cause people to feel terror or fear, were prohibited, and there were to be no public funerals. Liquor stores were to close at six p. m., and as soon as the municipal sanitary council judged that cholera had invaded the city, no more fruit or vegetables were to be brought in or sold.[117]

By the time these regulations were published, on August 8, cholera had already struck in Mexico City. On August 6 a woman and her daughter died of cholera in three hours.[118] Bustamante, who claimed that his wife had had an attack of cholera on July 31, and that he had cured her of it, wrote in his diary: "What is going to happen in a city that is so populous, so damp, and so impregnated with filth?"[119] And Stephen F. Austin, who was in Mexico City to try to get his colony of Texas made into a separate state in the Mexican Republic, wrote home: "The Cholora [*sic*] is at hand and very fatal. So I bid you farewell in case this should be the last."[120]

[116] Report dated June 18, 1833, packet Policía, salubridad, cholera morbus, AA.
[117] *El Telégrafo*, August 9, 1833.
[118] BD, August 6, 1833.
[119] *Ibid.*
[120] Austin to Williams, August 14, 1833, Barker, *Austin Papers*, II, 999.

On August 4, two days before the epidemic began, Farías asked Dr. Pedro del Villar, Director of the Military Sanitary Corps, to write a pamphlet on cholera that would be clear and simple enough to be understood by the poorest classes. Dr. del Villar completed his pamphlet on August 6 and entitled it: "Advice to the Mexican people on the most simple and easy means of preventing and curing the cholera morbus epidemic, set down in the way most adapted to their habits and customs, by order of the Supreme Government." "You," he added in a postscript to Farías, "whom the medical faculty have the honor of counting among its most distinguished members, are well aware how difficult it is to make technical medical language fit a popular style, and treat concisely subjects that are in themselves vast."[121] Farías also ordered on August 9 the printing of another pamphlet on cholera by Manuel de Jesús Febles, a professor of medicine and surgery at the University, and one of the few distinguished Mexican physicians who wrote on medical subjects. Dr. Febles listed the following causes that might lead to cholera: fear, drunkenness, excessive sexual intercourse and "any kind of intemperance." "Cholera," he maintained, "is not contagious but is propagated by infection so that sanitary precautions are not without their use, since it is usually communicated by contact or proximity to persons who have been attacked. . . . Cordons [sanitaires] and quarantines are entirely useless in preventing cholera. . . . Cholera attacks with less force places that are higher, well ventilated, cleaner and more cultivated. It is very destructive to the needy, the dirty, and those who are careless of their health." He stated that it had not been possible to say which of the many curative methods was the best. "No curative method," he added, "has proved satisfactory during the first two weeks of cholera although this is not so during the weeks following. This has given rise to the fact that some doctors and medicines have become famous although when tried somewhere else, or at the same place on the return of the epidemic, they have not had any favorable effect." Sundays and Mondays, he pointed out, were the worst days for cholera "because of the excesses commonly committed on those days." He could offer no explanation, however, why Wednesday was also a bad day.[122]

[121] Francisco A. Flores, *Historia de la medicina en México* (3 vols., Mexico, 1886. 1888), III, 273; Pedro del Villar, *Consejos al pueblo mexicano sobre los medios más sencillos y fáciles de precaver y curar el cholera-morbus epidémico, puesto del modo más acomodado a sus usos y costumbres, de orden del supremo gobierno.* (Mexico, 1833.)

[122] MS. of the pamphlet entitled: "Cartilla vulgar para conocer y curar la cólera morbus," in AA; Ignacio Martínez to City Council, August 9, 1833, AA; for biographical material on Dr. Febles *see*: Flores, II, 92-93.

In the meantime Bustamante was duly recording the daily progress of the cholera. On Thursday, August 8, a woman who sold vegetables died two hours after being stricken in the Plaza, and a boy died as he was vomiting. "This is unbelievably horrifying," he wrote in his diary.[123] The news arrived at 8:30 p. m. on August 11 that Santa Anna had come down with the cholera but had been cured: "Who knows what kind of a death heaven holds in store for this wicked man who is the cause of the desolation of this country . . ." was Bustamante's comment.[124] "You hear people talk about nothing but cholera morbus," he wrote on August 12, "and the only things they have to relate are about the dead." The same day (a Monday) he himself saw a poor woman on the point of dying in San Lorenzo Street, and he had a cup of oil, lime, and salt brought for her. "Until these people have more education, both moral and political, they cannot look after their persons . . ." he remarked.[125] On the 14th he reported that a corpse was being carried down Tacuba Street to the cemetery when it began to shout in a loud voice for water. The bearers put it down and went into one of the houses for help. "If this had not happened," Bustamante noted, "it would have gone to the sepulchre alive." He had heard that some corpses had been left unburied at the cemetery in the Palma section, and two of them were found alive and sitting up.[126]

It was on Monday, August 12, that Stephen F. Austin first felt what he called "premonitory simptons" [*sic*] of cholera, while he was working hard to prepare a petition to Congress asking it to repeal a law passed on April 6, 1830, preventing Americans from settling in Texas. He had planned to present it to Congress on Wednesday, August 14, but the sessions were called off because of the epidemic. He took a large dose of calomel, one of the standard remedies of the time, and reported: "In about ¾ of an hour I was relieved by a fine perspiration which I think saved my life, for others have died in less than one hour whose simptons were similar to mine. This disease prostrates the strength to a most astonishing degree . . . my stomach is so debilitated that I have to diet wtih great caution to avoid relapse."[127]

The Governor of the Federal District, General Ignacio Martínez, issued a proclamation on August 14 ordering physicians to see that their coachmen and lackeys wore yellow ribbons plainly visible in their hats so that the public would recognize carriages belonging to doctors. If anyone

[123] BD, August 8, 1833.
[124] BD, August 11, 1833.
[125] BD, August 12, 13, 1833.
[126] BD, August 14, 1833.
[127] Austin to Williams, August 21, 1833, Barker, *Austin Papers*, II, 999.

asked for their help, they were to stop and give it. If they went on horseback or on foot they were to wear yellow armbands on their left sleeves. All members of the secular clergy were to place a white E (for *Eclesiástico*) over the doors of their houses, so that people could find them when they were needed. Also, every house where there was a person sick with cholera was to display a piece of white cloth over the door or on the balcony.[128] "The day that people began to comply with this order," wrote Bustamante, "we could not help being horrified, for we saw that Mexico was a hospital."[129] Included in the same proclamation was a list of ceiling prices set by the government of the Federal District on certain foods and medicines which had begun to go up. According to Bustamante, the government soon had to repeal the prices it had set, which made things worse rather than better. In Bustamante's view "the Governor of the District and his councillors knew as much about [political economy] as I did about astronomy."[130] The proclamation concluded by prohibiting the introduction of fruit or vegetables into the District and forbidding the slaughter of hogs or sale of pork. It also recommended householders to burn horn or ocote pine in the streets as a method of fumigation to purify the air.[131]

The government was mortified to see an editorial on August 14, in one of the opposition papers, *El Fénix de la Libertad,* criticizing it for not having done enough for the people, and suggesting that they were better off under the Spanish colonial regime. The government paper replied by citing what had been done, and the authorities continued with their exertions.[132] On August 15 the government paper noted that the epidemic had not yet shown the full virulence which it had been described as possessing.[133] The authorities may have hoped that a moderately optimistic attitude would help to allay some of the fear that, it was supposed, made people more prone to the disease. If this was their intention, however, it had little effect, for the death rate on August 16 was a record one thousand two hundred and nineteen.[134] Farías arranged on August 16 for one of the military hospitals to set up separate wards for men and women unable to pay for medical care, and it was announced that the hospital was to "admit all of those who presented themselves."[135] Bustamante noted on Sunday, August 18, that the doctors were saying that the epidemic was going down, but he thought otherwise: "My eyes

[128] *El Telégrafo,* August 14, 1833.
[129] Cholera MS., p. 249.
[130] *Ibid.,* p. 248.
[131] *El Telégrafo,* August 14, 1833.
[132] *Ibid.,* August 17, 1833.
[133] *Ibid.,* August 15, 1833.
[134] Cholera MS., pp. 251-252.
[135] *El Telégrafo,* August 17, 1833.

see only corpses going to the cemetery in the streets, and I hear nothing but supplications in the churches." [185]

The attention of the government was mostly given to the needs of cholera victims, but it did make some attempts to discover the causes of the epidemic. It had been noticed that the symptoms of the disease were similar to those of poisoning by hydrosulphuric acid as described by Dr. Mateo J. B. Orfila in his famous work on toxicology.[187] Farías, therefore, ordered José Manuel de Herrera, Professor of Chemistry at the College of Mining, and Manuel Tejada, Professor of Physics at the same institution, to make an analysis of the Mexico City water to see whether it contained sufficient hydrosulphuric acid to cause poisoning. These two men, with a third, Tomás Ramón del Moral, then Professor of Drawing at the College of Mining, analyzed the water at its sources in the springs at El Desierto, Canales hill, Santa Fe wood, and Chapultepec, and found nothing to report. They also tested the water when it had reached Mexico City, and found that there it did contain a small amount of hydrosulphuric acid. They considered that it had absorbed hydrosulphuric acid gas from the atmosphere on its way to the city. Some years before, they reported, tests had been made of Mexico City water which had shown it to be very pure, so pure that in many cases it might be used for distilled water. They added, however, that they did not know how accurate these early analyses were. They concluded their report by saying that they would have liked to make "a perfect analysis," so that they could have determined whether the water contained enough hydrosulphuric acid to cause poisoning, but they had wanted to present their findings to the government as soon as possible, and they hoped others would be able to collect better data than they had.[188]

The better data that they hoped for were not forthcoming, of course, for many years. Dr. John Snow pointed to water as the major culprit in spreading cholera in his pamphlet *On the Mode of Communication of Cholera,* first published in 1849, and Robert Koch discovered the micro-

[186] BD, August 18, 1833.

[187] Guerra, *Iconografía médica,* item 785. Dr. Orfila, a Spaniard who became professor of medical jurisprudence and chemistry at Paris, achieved fame as a toxicologist and as a pioneer in medical jurisprudence (*Spanish Influence on the Progress of Medical Science,* London, 1935, p. 57). The description of poisoning by hydrosulphuric acid is in: M. P. Orfila, *Treatise on Mineral, Vegetable, and Animal Poisons* (2 vols., London, 1818), II, 372-378.

[188] Guerra, item 785.

organism that causes cholera in 1883.[139] But in at least one instance the report by professors Herrera, Tejada, and Ramón del Moral probably did some good: Bustamante noted in his history of the epidemic that the report said that the Mexico City water "was full of hydrosulphuric gas," and his conclusion was "that it was therefore necessary to boil it before drinking."[140] The government made another attempt to discover the origins of the epidemic that was perhaps more in line with current theories about the causes of cholera. They commissioned Dr. Leopoldo Rio de la Loza, later Professor of Chemistry at the School of Medicine, to make an analysis of the air in Mexico City to see whether anything could be found to account for the disease. Dr. Rio de la Loza made his report after careful studies, but was unable to make any helpful suggestions.

If the men of science in Mexico could not give the government much assistance in tracing the origin of cholera, the common people in a number of places seriously embarrassed the authorities by a theory that they developed themselves. Dr. Henry Perrine noticed how this came about in Campeche: "During the first week [of the epidemic] very few indeed were the persons of entirely white blood attacked by the cholera in Campeche. In one village, the mortality was so completely limited to Indian blood, that the natives imagined they were poisoned by the whites, and were on the point of revenging themselves by force, when luckily the death of a few white inhabitants enabled the Alcalde to convince the Mayas of their error."[142] From Mexico City the British Minister reported a similar but even more troublesome development: "The absurd idea had been very generally propagated that the mortality occasioned by the Cholera Morbus was owing to the publick fountains having been poisoned, by Foreigners."[143] This did not lead to any untoward incident in Mexico City, but at Izúcar, in the state of Puebla, a French family of seven persons was murdered, and near Cuautla some Germans only just escaped a similar fate. The government hastened to promise the French Minister that those guilty of the outrage on the French family would be signally punished. But the British Minister doubted whether the

[139] John Snow, M. D., "On the Mode of Communication of Cholera," in *Snow on Cholera* (New York, 1936); Fielding H. Garrison, *An Introduction to the History of Medicine* (Philadelphia, 1929), p. 579.

[140] Cholera MS., p. 253.

[141] Flores, III, 274. There is a biography of Dr. Rio de la Loza in: Francisco Sosa, *Biografías de mexicanos distinguidos* (Mexico, 1884), pp. 874-879.

[142] Perrine, *An Account*, p. 335.

[143] Pakenham to Palmerston, Oct. 5, 1833, FO.50/80A, PRO.

devious workings of the law in Mexico would render justice, and he described the outrage to his government as "an instance of what the lower classes in this country are capable of when advantage is taken of their ignorance and fanaticism to excite them to mischief."[144] In defense of the lower classes in Mexico, however, it must be said that if indeed they showed ignorance and fanaticism in actions of this kind, so did the lower classes in France itself where, in 1832, the poor classes of Paris, finding that cholera seemed to single them out for its worst attacks, began to think that their food was being poisoned, and violently attacked those who, they supposed, were responsible.[145]

At the end of August and the beginning of September the decline of the epidemic, first noted by the doctors on August 18, was remarked upon by others. Stephen F. Austin, still waiting for Congress to resume its sessions, wrote his friend Samuel M. Williams on August 28 that the cholera was abating. "Nothing of much interest has transpired since my last," he added, "all is suspended by cholera—all is melancholy with *death* and *civil war*."[146] Two weeks later Congress still had not met, but Austin reported that the cholera had diminished. "I have never witnessed such horrible scenes of distress and death,' 'was his concluding remark about the epidemic.[147] The figures issued by the city council, although admittedly not complete, confirm the gradual lessening of the epidemic. On September 1 they estimated that there were 2875 persons still sick with cholera (1354 men and 1521 women). Ten days later the total had dropped to 875 (370 men and 505 women).[148]

It was not until November 22 that the authorities did away with the special clean-up regulations imposed in Mexico City, although by September 11 the cholera was considered to be almost over.[149] On the latter date the city council issued some statistics which are interesting, if admittedly inaccurate. The city had been divided up into thirty-two districts, each with a councilman, who was instructed to gather statistics on the number of those stricken with cholera, the number who died, as well as on other

[144] *Ibid.*

[145] Jean Baptiste Bouillaud, *Traité pratique, théorique et statistique du choléra-morbus de Paris* (Paris, 1832), p. 180, n. 2.

[146] Austin to Williams, August 28, 1833, Barker, *Austin Papers*, II, 1003.

[147] Austin to James F. Perry, Sept. 11, 1833, Barker, *Austin Papers*, II, 1005.

[148] MS. Report by Antonio Garay in vol. 1, Salubridad y policía, AA; table of statistics in FO.50/B-186, PRO.

[149] Broadside by J. M. Tornel, Nov. 22, 1833; Parkenham to Palmerston, Sept. 11, 1833, FO.50/80B, PRO; Austin to Williams, Sept. 11, 1833, Barker, *Austin Papers*, II, 1005.

matters. But the figures collected only represented those who were charity patients. The many who had been able to pay for their own treatment had not come to the dispensaries and had not been counted. Also, some of the cemeteries did not send in figures for burials, and there was no way of checking the numbers of those buried in secret (the compilers estimated that not less than 500 were probably buried secretly). Furthermore, figures were lacking from some of the hospitals. Bearing these imperfections in mind, the statistics were as follows: a total of 48,863 persons had contracted cholera in Mexico City since August 7 (20,157 men and 28,706 women). Of these some 28,356 had recovered (11,416 men and 16,940 women). Some 4,628 men and 5,694 women, a total of 10,332 persons, had died. Most of the dead were members of the poorer classes, although the epidemic did not spare the others.[150]

Confronted with the emergency of the epidemic, the leaders of Church and State apparently endeavored to stifle their growing distrust of each other. Farías called upon Franciscans and Dominicans to send members of their orders to cholera hospitals, and the city council wrote the Cathedral Chapter on August 9 for a contribution to the funds being collected for the epidemic.[151] The Chapter sent a donation of two thousand pesos on August 17, and added in a note that "it was not satisfied" with the amount, but that the civil war and the sums that it had already sent to other parts of the diocese in the states of Mexico, Querétaro, and Guanajuato, prevented it from increasing the gift, as it would have liked.[152]

It is possible that the Church, like other political opponents of the government, was reluctant to provide large sums for a government which

[150] Table of statistics in FO.50/80B-186, PRO. Among the distinguished men who died of cholera were: Tomás Salgado and Jacobo Villaurrutia, Justices of the Supreme Court; Juan de Dios Rodríguez, of the Treasury; the poet Anastasio María de Ochoa y Acuña. Farías lost a three year old daughter on August 21. The architect Francisco Eduardo Tresguerras of Celaya, and Vice-Governor Juan Martín de Veramendi of Coahuila and Texas also died of cholera. How the state of Mexico fared in the epidemic it is not possible to say with the present available information, but its governor, Lorenzo de Zavala, trained as a physician (Nixon, p. 198), worked as one during the epidemic (Zavala to Farías, Sept. 2, 1833, Farías Papers, Latin American Collection, University of Texas, Austin, Texas. (cited hereinafter as FP.)

[151] "Orden a los prelados de S. Francisco y Santo Domingo," August 11, 1833, FP; José H. Maniau to Antonio Garay, August 17, 1833, AA.

[152] Maniau to Garay, August 17, 1833, AA. One estimate of the deaths from cholera in the archbishopric of Mexico was 21,802 (José María Bocanegra, *Memorias para la historia de México independiente*, 2 vols., Mexico, 1892, II, 481-493). Prominent on the list of contributors to the cholera fund which included the donation by the Chapter were British and American business firms (Guerra, *Iconografía*, item 792).

it distrusted. But whether this was so or not, the Church had its own methods of fighting the cholera, methods which were probably more effective in raising the morale of the masses of the population than anything that the government could do. St. Roch, patron saint of the plague, was declared special guardian against the cholera, and the Franciscans brought out the image of the saint in one of the first religious processions held because of the epidemic.[153] The Dominicans carried out in procession their Santo Cristo del Noviciado, which Bustamante mentions they held in high veneration. The most imposing processions were held on Sunday, August 25, "the day of contrition for Mexicans," as Bustamante called it. At nine o'clock on that day a solemn procession bearing Our Lady of Los Remedios, venerated since the time of Cortés, wound its way from the Cathedral to the church of Santa Teresa la Antigua, where it was to remain in place of an image of Christ crucified which was to be taken in procession to the Cathedral. There was some difficulty in forming the procession to the Cathedral because of the great crowds that collected. Bustamante has left a description of the scene: "First came a multitude of poor people; following them came the religious brotherhoods with their respective insignias, the Brotherhoods of the Holy Schools, the corporations of coachmen from every parish, with richly embroidered banners, the third orders, the religious communities (including the Carmen), the venerable secular clergy, then our Lady of Dolores from . . . the Profesa, the most precious image that has come from the sculptor's hand, and finally, the Cristo of Santa Teresa." When the procession came out into the street, Bustamante continued: "There arose a shout pierced with many groans, all coming as if from one throat, accompanied by the sound of breast-beating; the air was filled with sighs, there was not an eye that did not shed tears of affliction, nor a mouth that did not utter fervent prayers . . . thousands of people prostrated themselves, implored, asked pardon for their sins, and raised their arms aloft. . . ." As soon as the procession had finished, Bustamante went home and wrote a description of it.[154] "I confess," he wrote, "that the same feelings that touched my heart that day, still touch it. This was one of the greatest sights that I have ever seen in my life." "From that day on," added Bustamante, "the pest began visibly to diminish."[155]

Bustamante saw some good in other aspects of the epidemic. "I can state without fear of error," he wrote some time after the epidemic was

[153] J. Manuel Ylesias to his brother, August 25, 1833, FP; Cholera MS., p. 253.
[154] Cholera MS., pp. 254-256.
[155] *Ibid.*, pp. 256-257.

over, "that the whole Mexican nation was so shaken at that time that nobody thought of anything but reconciling himself with God in order to suffer his Judgment. Enemies became reconciled, married couples who had been separated came together again, jewels and money that had been stolen were returned, and men who lived the most disordered lives changed their ways. Confessors received from some penitents prohibited books which they had read, poisoning their hearts and corrupting their lives." People's homes became more like monasteries, he reported, "every family lives with great sobriety, they eat only rice and a very little meat, they pray a great deal and everyone behaves like criminals in chapel." [156]

Signs of reconciliation between God and man there may have been at this time, but not between rival politicians. Bustamante describes Farías as a "tiger" and a "monster" because of his alleged severity towards persons suspected of siding with the rebels.[157] Furthermore, relations between Church and State continued to be extremely strained. It was probably such actions as that of the Congress in secularizing the missions of the Californias on August 17 that aroused most of Bustamante's indignation. He described the government as being the only body that went remorselessly ahead, in spite of the epidemic, with plans to crush its enemies. "Never," he later wrote, "have more energetic measures been taken to organize military bodies and send them to Guanajuato, south to Oaxaca, and to other points where the voices of those who clamored for the reestablishment of order had not yet been silenced." [158]

It was but a step from this point of view to one blaming the Farías government for the epidemic, a step that Bustamante managed to take by ingeniously recalling the opinion of the doctors that fear played a part in predisposing people to cholera. The authors of the deaths and horrors of the epidemic, he wrote in his diary, "are Santa Anna and Gómez Farías, whose atrocities, perpetrated in Mexico from June on, predisposed the people of the capital to it, for they were seized with anguish, so that when the disease arrived among us its ravages were double what they would have been had we received it calmly." [159] This argument may have appealed to opponents of the government who hesitated to go one step further still and believe that the cholera epidemic was sent by God to punish the authorities for attacking the Church. Yet Bustamante reported that this was what the masses believed: "Every Mexican of

[156] *Ibid.*, p. 257; BD, August 20, 1833.
[157] Cholera MS., p. 245.
[158] *Ibid.*, p. 258.
[159] BD, Sept. 12, 1833.

the common class," he wrote, "believes that the disasters of the present epidemic are a just punishment for the scorn in which religion and its ministers are held." [160] Even supposing that Bustamante exaggerated the numbers who believed this, it was an ill omen for the Farías party in the government, a warning that was to be fulfilled in 1835 when Farías and his family went to New Orleans as refugees.

To conclude, it has been shown that the epidemic helped to make the Farías government unpopular with the masses and probably hastened its collapse.[161] It has also been seen that the national government and the state governments worked hard to help the lower classes, who suffered most from cholera. These efforts of the "liberals of 1833" should be borne in mind when considering assertions that they were indifferent to the well-being of the masses.[162] On the medical side, the government can hardly be criticized for following what was considered to be the most enlightened medical opinion of the day: that cholera was not contagious. This view, in fact, stressed the importance of sanitation, which in turn led to increased medical and lay interest in public health and in the improvement of the living conditions of the poor. Statistically, it is difficult to give a true impression of the damage done by the epidemic, but that it called forth intelligent, energetic, and courageous action by the people of Mexico is abundantly clear.

[160] BD, Sept. 10, 1833.

[161] The decline of cholera in Mexico City in September did not mark the end of the epidemic in the Republic. Cholera began in the state of Oaxaca early in September, causing an estimated total death roll of 9,314 out of a population of 485,014. Oaxaca City lost 1400 out of a population of approximately 18,000 (Jorge Fernando Iturribarría, *Historia de Oaxaja*, 3 vols., n. p., 1935, 1939, I, 198-200). Porfirio Díaz, two years old at the time, lost his father in this epidemic (Porfirio Díaz, *Memorias*, 2 vols., Mexico, 1922, I, 29). In northern Mexico 700 persons contracted cholera in the Parras area in the first two weeks of September and 81 of them died (Diego Grant to Junta de Sanidad, Sept. 13, 1833, Archivo General de Historia, Saltillo, Coahuila). There is no evidence that cholera spread to the territory of New Mexico or to California, although there was a "mysterious pestilence' 'in California at this time that one writer says might possibly have been cholera (E. P. Twitchell, " The California Pandemic of 1833," *California and West. Med.*, 1925, *23*: 593).

[162] J. Lloyd Mecham, *Church and State in Latin America* (Chapel Hill, 1934), pp. 409-410.

THE WEST INDIAN WEEDWOMAN OF THE UNITED STATES VIRGIN ISLANDS

A. J. OAKES and M. P. MORRIS

Six years ago the authors began a study of the toxic plants of Puerto Rico and the Virgin Islands. This study was begun for the purpose of determining if the toxic plants of these areas would pose difficult problems to a widely expanding dairy industry. During the initial phases of our study of the toxic plants of the Virgin Islands we soon encountered another group that was interested in many of the plants which we were collecting. This group, the herbalists, was collecting these same plants for the preparation of home remedies. Our frequent encounters enabled us to make a thorough study of these herbalists. Our observations are reported below.

The herbalist of the Virgin Islands collects, prepares, sells, and prescribes the use of drug plants. She is generally known as a West Indian Weedwoman and is probably better known for her knowledge of plants than for her ability to diagnose and prescribe. The herbalist is not always a woman, but many more women than men practice the art.

Saturday is the most important marketing day throughout the Caribbean area. It is on this day that the fresh vegetables, fruits, herbs, and medicinal plants are brought into the open markets for display and sale. The Weedwoman collects her plants from gardens, fields and woods on Friday so that they remain fresh for market day. She usually deals only in medicinal plants; but it is not uncommon to find one selling edible fruits and vegetables, herbs, and medicinal plants, or any combination of these. The person who deals in medicinal plants does not usually collect at random for possible disposal. Most of her collection is based on prior requests. However, she sometimes brings to market some of the more common remedial plants with the hope that they will be purchased by her customers.

The Weedwoman occupies a rather unusual position in the community and is looked upon with much respect and admiration. She is widely known throughout the community for her skill and seems to take great pleasure in impressing people with her importance, and especially with her knowledge of medicinal plants and their uses. Her activities have been

popularized in the form of a song which may be heard throughout the islands today.[1]

A very close relationship often develops between the Weedwoman and her customer. This is brought about by her customer confidentially revealing his ailment. After a mutual understanding concerning the symptoms has been reached, a prescription for treatment is then discussed and agreed upon. This prescription may originate with the Weedwoman or with her customer. Once the Weedwoman wins the confidence of the customer requesting treatment she can count on future transactions with this party. In those instances where the needs of a customer are known to the Weedwoman, she automatically includes in her weekly collection those plants which she recommends as a cure for the ailment. Situations may arise where more than one Weedwoman may be attending the needs of the same customer, each for a different ailment. It is very uncommon, however, for a customer to seek advice and treatment for the same ailment from more than one Weedwoman at a time.

The more commonly used plants are shown in Table 1, along with the ailments for which they are used. Undoubtedly other plants are used, and the authors were told of some of them, but the information given about them was either so sparse, or in some cases, vague, that they have not been included in the table.

It will be noted that a single plant, e. g., *Jatropha curcas*, is often used for several unrelated ailments; and that a single ailment, e. g., the common cold, may be treated with any one of several unrelated species of plants. With ailments for which the recommended treatment calls for any one of a group of different species, the Weedwoman prescribes only one species at a time. However, at some point in the course of treatment a change may be made. In fact, it is quite often changed because the patient does not feel that his current treatment is effective.

The above practice, in which remedies consist of a single plant species, resembles the custom of the "Medicinemen" of the South American Indians. However, the West Indian Weedwoman also uses a combination of two or more different plants to prepare many of her remedies. Such combinations are used for colds, fevers, muscular pains, and urinary disorders and are essential ingredients of invigorating baths. Further, more than one combination may be used for the same ailment. Urinary disorders, for instance, may be treated with either one of two concoctions,

[1] Trandalier Jones, "Impressions of Nutrition Habits in the Virgin Islands." Nutrition Division Virgin Islands Department of Health, *Bulletin* no. 11, 1952.

one containing two species, and the other containing four species of plants.

While there is a vast assortment of home remedies in the Virgin Islands, most are based on the practice of "one disease, one cure," thus reflecting the influence of the early European herbalists.

The Weedwoman's prescription states the species or combination of species, and exactly what part of the plant is to be used. Detailed instructions regarding the methods of preparation, dosages, and manner of treatment are given to the patient. Such information, whether it be solicited or not, is gladly given by the Weedwoman as an integral part of her services. This information which accompanies the sale of medicinal plants has no bearing whatsoever on the cost of the plants or plant parts.

For some remedies the Weedwomen use plant material of a specified physiological age. The treatment of urinary disorders with the leaves of the Heite tree calls for mature, yellow leaves. By using these, the Weedwoman associates the medicinal activity of the plant with maturity.

The Weedwomen are fully aware of the toxic effects of some of the more poisonous plants which they use. They often given stern warnings against overdoses. When *Annona muricata* is used as a "cooling agent," only three leaves must be used. It is said that additional leaves will make one very drowsy. The Physicnut is used as an anthelmintic in doses according to weight, but only after a stern warning is given on overdoses.

The herbalists of the Virgin Islands maintain no shroud of mystery over their activities. They confess to no mysterious prowess or healing powers. No ceremonial rites are used in concocting and dispensing home remedies. They are dead serious about their business and firm, though not boastful, in their convictions. These admirable characteristics certainly differentiate the Weedwoman from "Medicinemen" who continue to cloak their healing powers in the shrouds of mysticism.

Two of the Weedwomen studied are elderly sisters living in separate villages of St. Croix. Their knowledge of medicinal plants was handed down from their mother who was a Weedwoman during the period of Danish ownership of the Virgin Islands. Two others came to St. Croix from the neighboring British islands, and brought with them practices which are strikingly similar to those of the native Virgin Island Weedwoman. This similarity points out the obvious fact that the flora of a geographical area determines to a certain degree the nature of home remedies.

Not a single instance was found among the Weedwomen of their instructing the younger generation in their art. Repeated questions on

this subject brought forth answers that the youngsters had either moved away from the rural areas or that they simply were not interested in continuing the practice.

Even though there are no local laws prohibiting the sale of plants or plant parts for use as home remedies, the practice is frowned upon by certain segments of the population. At the same time, many highly responsible people will willingly, and with pleasure, relate how they have been cured of some ailment by the use of one of the Weedwoman's home remedies. The local health authorities and all practicing physicians in both St. Thomas and St. John are aware of the Weedwomen and their activities. Interviews with the Municipal Physician for the Island of St. Croix revealed that he neither encouraged nor opposed her activities, but was tolerant of them. He seemed to feel that the limited activities of these relatively poor Weedwomen who eke out a livelihood by selling medicinal plants were not harmful in any manner. This physician's tolerance for this age-old custom, as well as for other customs of the people, may explain why he has been so outstandingly successful in establishing a modern health program for the Island of St. Croix. The modern health program of the Virgin Islands, which probably cannot be surpassed anywhere in Tropical America, will certainly lead to the complete extinction of the Weedwomen of this area.

Most of these findings are based on information obtained during numerous personal interviews with several Weedwomen living on the Island of St. Croix in the United States Virgin Islands. There are Weedwomen in St. Thomas, but none in St. John to the knowledge of the authors.

It is interesting to note the wide variety of plants which are utilized. The sources range from the parasitic shrub *Phthirusa caribaea* to the official flower of the Virgin Islands, the beautiful, yellow-flowering tree, *Tecoma stans*. Thirty plant families, representing eighteen orders, are included in the list given in Table 1. The common names of many of the species aptly describe plant characteristics, e. g., Jumbee Bead, Thistleroot, Spanish Needle, Bloodroot, Wild Okra, and Manyroots. Other common names describe plant usage, e. g., Physicnut, for *Jatropha curcas*, is roughly descriptive of its medicinal properties.

A check of the chemical literature showed that at least a cursory examination has been made of 18 of the 58 species listed in Table 1. A few have been studied in detail, e. g., *Ricinus communis* and *Annona muricata*. However, the paucity of pharmacological data makes it impossible to show one way or the other whether there is any logical basis for the use of these

TABLE 1

PLANTS USED BY VIRGIN ISLANDERS AS HOME REMEDIES [a]

Scientific Name	Local Common Name [b]	Use
1. Abrus precatorius L.	Jumbee Bead, 2, 5	Coughs and colds
2. Acacia spp.	Casha, 2, 5	Proud flesh
3. Achyranthes indica	Man-better-man, 2, 5	Tonic, tired blood
4. Albizzia lebbeck (L.) Benth.	Thibet, 2, 4, 5	Colds, coughs, invigorating baths
5. Aloe vulgaris Lam.	Simpervivy, 3, 4, 5	Colds, sores
6. Annona muricata L.	Soursop, 2, 4, 5	Colds, sedatives, cooling
7. Argemone mexicana L.	Thistleroot, 2, 5	Colds, pneumonia
8. Artocarpus communis Forst.	Breadfruit, 3, 4	Heart trouble
9. Asclepias curassavica L.	Kittie-Mc-Wanie, 2, 5	Poultice for ringworm, invigorating baths
10. Borreria ocimoides	Waterbreaker, 2, 5	Bladder trouble
11. Carica papaya L.	Papaya, 2, 4, 5	Bad heart, diabetes, gas pains, analgesic
12. Cassia alata L.	Sarsaparilla, 3, 5	Tonic
13. Cassia occidentalis L.	Wild coffee, 2, 5	Constipation, invigorating baths, bed-wetting
14. Cecropia peltata L.	Trumpet Tree, 3, 5	Diuretic, indigestion, cooling
15. Comocladia dodonaea	Christmas Bush, 3, 5	Colds, invigorating baths, fever.
16. Cordia ulmifolia Juss.	Black Sage, 2, 5	Purgative, fevers
17. Cosmos caudatus HBK.	Spanish Needle, 2, 5	Strains, muscular spasms
18. Croton astroites Ait.	Maran, 2, 5	Bladder trouble, muscular strains
19. Cymbopogon citratus (DC.) Stapf.	Lemon grass, 3, 4	Fevers and colds
20. Datura suaveolens Humb. & Bonpl.	Moonplant, 2, 4	Foot pains
21. Euphorbia hirta L.	Milkweed, 2, 5	Stomachache
22. Heliotropium indicum L.	Eye Bright, 2, 5	Sores, teething, stomach cramps, colds
23. Hibiscus spp.	Hibiscus, 2, 4	Colds and coughs
24. Hippomane mancinella L.	Manchaneel, 1, 5	Ringworm
25. Jatropha curcas L.	Physic Nut, 3, 4	Worms, sores, stomachache, fevers, salivation of nursing infants
26. Lachnanthes tinctoria Ell.	Bloodroot, 3, 4	Muscular strains
27. Leonotis nepetaefolia	Hollow Stalk, 1, 5	Fevers, boils, baths for prickly heat
28. Leucaena glauca Benth.	Tan-Tan, 1, 5	Colds, invigorating baths
29. Lilium titrinum Ker.	Tiger Lilly, 3, 4	Boils and sores
30. Malachra alceaefolia Jacq.	Wild Okra, 2, 5	Bad heart, intestinal disorders, cooling
31. Melicocca bijuga L.	Kenip, 2, 4, 5	Coughs and fevers

[a] William H. Sawyer, Jr., *Scient. Monthly*, 1955, *80*: 371-376, recently reported a list of 39 plants used for medicinal purposes by the natives of Inagua, one of the smaller, southern islands of the Bahamas. Only three species appear in both Sawyer's list and ours.

[b] The numbers indicate the following status: 1. Abundant, 2. Common, 3. Rare, 4. Planted, 5. Wild.

Scientific Name	Local Common Name*	Use
32. Momordica charantia L.	Maiden Apple, 2, 5	Bad heart, indigestion, fevers, analgesic poultice, diabetes
33. Morinda citrifolia L.	Pain Killer, 3, 5	Heart trouble
34. Mucuna pruriens (L.) DC.	Cowitch Vine, 2, 5	Worms
35. Ocimum sanctum L.	Garden Balsam, 2, 5	Colds, menstrual pains, bad heart
36. Opuntia dillenii Haw.	Pricklypear, 2, 5	Poultices for inflammation
37. Parthenium hysterophorus L.	Whitehead Broom, 2, 5	Muscular strains, analgesic, vermifuge, heart trouble
38. Petiveria alliacea L.	Congo Root, 2, 5	Stomachache, headaches, relief from faintness, colds, strains
39. Phthirusa caribaea (Krug & Urb.) Engler	Chincery Bush, 2, 5	Invigorating teas and baths
40. Phyllanthus niruri L.	Creole Senna, 3, 5	Increasing the appetite, boils
41. Piper aduncum L.	Black Wattle, 2, 5	Sedative, cooling, constipation
42. Pluchea odorata (L.) Cass.	Sweet Scent, 2, 5	Coughs, colds, headaches
43. Portulaca oleracea L.	Pusley, 1, 5	Prickly heat, worms
44. Pseudoelephantopus spicatus (B. Juss.) Gleason	Bulltongue Bush, 2, 5	Colds, heart trouble
45. Ricinus communis L.	Castor Bean, 2, 4, 5	Worms, stomachache, fevers, analgesic poultice
46. Rivina humilis L.	Jumbee Pepper-bush, 2, 5	Diarrhea
47. Ruellia tuberosa L.	Manyroots, 2, 5	Pains in joints
48. Solanum torvum Sw.	Turkey Berry, 2, 5	Impaired vision, worms
49. Spigelia anthelmia L.	Wormgrass, 3, 4	Worms
50. Spondias mombin L.	Hog Plum, 2, 4, 5	Colds, invigorating baths
51. Stylosanthes hamata Taub.	Mother-sea-gel, 2, 5	Fevers, teething children
52. Tecoma stans (L.) HBK.	Ginger Thomas, 2, 4, 5	Colds, fevers, diabetes, jaundice, headaches
53. Thespesia populnea	Heite Tree, 2, 5	Milk abnormalities during early lactation, edema, colds, fever
54. Tournefortia hirsutissima L.	Chiggernit, 2, 5	Diuretic, "internal" fevers, prickly heat
55. Tragia volubilis L.	Stinging Nettle, 2, 5	Muscular spasms, analgesic, diuretic
56. Triumfetta semitriloba Jacq.	Mahoe, 2, 5	Gas pains
57. Verbesina alata L.	Inflammation Bush, 3, 4	Muscular spasms and strains
58. Vigna repens (L.) Kuntze	Goat Wiss, 2, 5	Coughs and colds
59. Waltheria americana L.	Marshmallow, 2, 5	Postnatal purgative, cooling

*The numbers indicate the following status: 1. Abundant, 2. Common, 3. Rare, 4. Planted, 5. Wild.

plants as medicinals. The authors did find a large number of the plants to be highly toxic to young chicks; and it appears that many of them could be made the basis of very interesting chemical and pharmacological studies.[8]

It should be borne in mind that the West Indian Weedwoman has little if any knowledge of the active components of the plants which she uses. She is little concerned with, and certainly not impressed by, any scientific facts upon which she might base her recommendations. She is far less concerned about how any cure may be effected than she is about the end result. Her almost complete illiteracy places her far below the level of the Sixteenth Century European herbalists, while her freedom from any shrouds of mystery places her above "Medicinemen" of many tropical areas. In the past she has made valuable contributions to her society but will continue to do so only in areas where the physician in unavailable. As for the United States Virgin Islands, she has almost completed her mission.

[8] The data obtained from the chick feeding tests will be made part of a forthcoming bulletin on the toxic plants of Puerto Rico and the Virgin Islands.

ANIMAL DISEASE IN COLONIAL AMERICA*

J. F. SMITHCORS

The animal disease problem as it developed in colonial America could have evolved only under the set of conditions peculiar to colonial America. No domestic animals were native to this country; thus all the livestock of the first settlers was brought with them. Six hundred swine were brought to Jamestown in 1609. By 1627 they had multiplied to such an extent that the colonists found it necessary to palisade the settlement to avoid being overrun by them, and the Indians were amply supplied by the feral swine in the surrounding timberland. A few cows were landed prior to 1609, and 100 were imported in 1611; so important were they considered that their destruction was made a capital offense,[1] but it may be doubted that this extreme penalty was ever meted out. Later a law was passed which permitted the killing of sterile and diseased cattle. By 1620 the number of cattle in Virginia had increased to 500, to perhaps 5000 by 1627, and to 30,000 by 1640—but decreasing to about 20,000 by 1648, apparently as a result of export to New England, and the removal of restrictions against cattle killing.[2]

This phenomenal increase in numbers[3] is corroborative evidence that restrictive legislation was in actual practice. Barring additional importations *en masse*, which did not occur, this increase is further evidence that there could not have been any widespread cattle disease to decimate the ranks. Up to a certain point, it is quite believable that animals in the New

* Read at the thirtieth annual meeting of the American Association of the History of Medicine, Williamsburg, Virginia, May 8, 1957.

[1] D. J. Browne: Domestic animals. *Report of Commissioner of Patents. Agriculture.* Washington, 1854: p. 48 (swine); pp. 1-2 (cattle). This author states that in 1610, "an edict was issued prohibiting the killing of domestic animals of any kind, on penalty of death to the principal, burning the hand and loss of ears to the accessory, and twenty-four hours' whipping to the concealer."

[2] P. A. Bruce: *Economic History of Virginia in the Seventeenth Century.* Vol. 1. New York, 1896: p. 298. In 1627 a law was passed prohibiting the killing of female cattle unless they had ceased to breed, "or were stricken with a disease or infirmity that would inevitably end in death."

[3] In a paper presented at the 30th annual meeting of the American Association of the History of Medicine, Dr. Blanton advanced the hypothesis that a major factor responsible for the slow increase in population in 17th century Virginia was the great disparity of the sex ratio (5 males: 1 female). Except for the small numbers of livestock imported, the fact that nearly all were females might, by reverse analogy, help to account for the great disparity between the increase in the human and animal population.

World enjoyed an immunity against disease unknown for centuries in Europe, which had become a notorious breeding ground for cattle plagues. Inasmuch as no domesticated animals had existed previously in the Colonies, imported animals were brought into a practically disease-free environment.

This picture is in stark contrast to the situation as it pertained to the diseases of man, and may be hard to believe for one acquainted with this aspect of colonial history. Blanton, in his study of *Medicine in Virginia in the Seventeenth Century*,[4] mentions that a major contributing factor to the toll of epidemics was the filth, privation, and disease suffered in passage. In particular the frank or incipient scorbutic state upon landing would predispose those who had survived scurvy to a host of other diseases. The ability of cattle to synthesize vitamin C undoubtedly was an important factor in permitting the bovine species to be landed in perhaps as healthy a state as when loaded.

Contemporary accounts make it certain that any increasing animal population would of necessity have been kept increasingly widely scattered, for the early colonists made no attempt to raise hay or grain for their stock. This meant that even in the relatively mild winters of Virginia, a considerable area, probably several acres per animal, would have been required for winter browsing. The culture of grasses in Virginia dates to about 1760, and it would have been impossible for an intensive system of livestock husbandry to have been instituted prior to this development.[5] Moreover, cropland was abandoned as it "wore out," and new land was cleared. While it must be assumed that livestock in Virginia did suffer much winter hardship, the situation was far different from that in New England, where it often was necessary to import forage from Great Britain. Even so, cattle died by the thousands from starvation during the more severe winters. The winter of 1673 is mentioned as being especially severe; 50,000 cattle in Virginia alone were said to have perished.[6]

While local outbreaks of infectious disease undoubtedly were a problem at various times, the first mention of an epizootic of major proportions appears to have been that of catarrh in horses[7] in 1699, and again in

[4] W. B. Blanton: *Medicine in Virginia in the Seventeenth Century*. Richmond, 1930: chapter 2.

[5] C. L. Flint: A Hundred Years' Progress. *Report of Commissioner of Agriculture*. Washington, 1872: pp. 274-304.

[6] Bruce: *op. cit.*, p. 372.

[7] George Fleming: *Animal Plagues*. Vol. 1. London, 1871: pp. 171, 255.

1732. The latter outbreak began in New England and spread southward, eventually reaching the West Indies. The first continuing series of epizootic diseases appears not to have begun until 1760 when dog distemper[8] was reported in Boston, apparently for the first time anywhere in the world. In 1767 it was raging in Louisiana, where the greater part of the canine population was said to have died. Catarrhal diseases of horses and cattle recurred throughout the decade and beyond. In 1767 nearly all the young horses in New Jersey died,[9] probably of the respiratory disease, strangles.

Rabies[10] was first seen in the colonies in dogs in 1770, principally in and around Boston. Swine, which had the run of the streets, were the principal urban victims, and foxes in the rural areas were infected. By 1779 rabies was common in Philadelphia and Maryland, and had spread as far as the West Indies. In the 1780's the disease was characterized as raging all over the northern states, and common elsewhere. By the early 1800's it had spread as far west as Ohio, where dogs, volves, and foxes were affected in great numbers. The physician, James Mease, published a work on hydrophobia[11] in 1792, in which he rejected the common concept of spontaneous generation of the disease in man.

Influenza in horses[12] was identified as such in 1782, and caused great mortality in Maryland in 1789. During the 19th century this disease became one of the great animal plagues in America, and was particularly serious in the cities where horsedrawn transportation had become a necessary adjunct to commerce. Gapeworms[13] destroyed 80% of the fowl population in Maryland in the 1790's, and this parasite became a major national problem during the following century.

Beginning about 1770 a mysterious malady, which seized the imagination of intelligent persons as well as the gullible, made its first appearance. This was the so-called "hollow-horn" of cattle.[14] It was diagnosed by feeling the base of the horns and finding them cold—and, therefore, presumably hollow—a condition which any curious person could have determined to be normal. The "disease" was cured by boring the horns with a gimlet and pouring in salt, pepper, boiling water, turpentine, or a host of other harsh medicaments. Not until nearly 1850 did a semblance

[8] *Ibid.*, p. 409. [9] *Ibid.*, p. 426. [10] *Ibid.*, p. 442, *et seq.*

[11] James Mease. *On the Disease Produced by the Bite of a Mad Dog.* Philadelphia, 1792.

[12] Fleming, *op. cit.*, pp. 507, 528.

[13] *Ibid.*, p. 545.

[14] *Ibid.*, p. 442.

of reason prevail, and thoughtful men voiced the opinion, undoubtedly the correct one, that "hollow-horn" was nothing but "hollow-belly."[15]

While it must be supposed that the settlers took care of the accidents and diseases of their livestock as best they could, there is little evidence for the existence of any sort of professional attention until well into the 18th century. Even then the few who styled themselves horse-doctors or cow-leeches were, for the most part, totally ignorant of the conditions they professed to treat. Blanton[16] states that "in colonial Virginia the services of veterinarians were sought and valued." He mentions a William Carter, "an expert veterinarian, or cow-doctor," who was involved in a lawsuit in James City in 1625 over a cow he had treated for a fistula of the eye, for which Carter had "used his best skill, yett at length she dyed." This is perhaps the first specific reference to veterinary services of any kind in America. While Blanton quotes a contemporary source to the effect that cattle might often have needed "the opinion of a physician," only a few other isolated cases are recorded. It is perhaps significant that there is no mention of widespread animal disease of any sort at this time.

While the need for physicians was early recognized, the American colonists had brought with them the then typically British indifference toward the necessity of medical care for their animals, particularly with regard to preventive medicine. The absence of widespread animal disease of significant proportions for a century or more undoubtedly reinforced this attitude. Prior to 1800, only about 20 works of any sort relating to the diseases of animals and their treatment were published in America. The first was an anonymous *Husbandman's Guide*, Boston 1711, which included "excellent receipts for diseases in cattle."

More than half of these publications were reprints of British works on farriery, not always from the best authors. An example of the latter was *The Citizen and Countryman's Experienced Farrier*, published in Wilmington 1767, and in Baltimore 1797 and 1803, by J. Markham, G.

[15] R. L. Allen: *Domestic Animals*. New York, 1847: p. 53. This author states that "hollow-horn" (in 1847) "is not infrequently *hollow stomach*" and prescribes bleeding and physic, shelter and good feed. However, he adds that the following may be useful: vinegar, salt and pepper poured into the ears, boring the horns to let out the matter, turpentine, boiling water or hot brimstone on the base of the horns, and salt and soot internally.

[16] Blanton, *op. cit.*, p. 231. Dr. Blanton is perhaps more than generous in his appraisal of the situation. It is doubtful that even the term "veterinarian" was in use at this time. Although it had been introduced with the advent of printing, the term was first used in a printed English work by Sir Thomas Browne in 1646, and was not adopted professionally until about 1800. Nor did England have a veterinary school until 1792.

Jeffries, and discreet Indians. Markham, however, was a Britisher who had died before 1650, and whose infamous self-styled *Maister-peece* of 1610 was the scourge of the veterinary profession for two centuries, and the source of most of this American work. Jeffries was a Pennsylvanian who apparently was less discreet than his Indians in choosing a source from which to copy. The Indians, who were identified as "experienced" in the third printing, were at least sufficiently discreet not to have their contributions, if any, identified. One of the better of this group of British works was printed by Benjamin Franklin in 1735.

The first cattle disease to become a major problem in America was the so-called "bloody murrain," later identified as Texas fever. As early as 1766, certain features of the transmission of the disease were recognized in a law of North Carolina prohibiting the movement of cattle from South Carolina and Georgia over its border.[17] And in 1795 a finer discrimination was made in a law forbidding the movement of cattle from the lowlands of North Carolina to the highlands between April and November.[18] Though, of course, unknown at the time, it would have been during the summer months that the cattle tick, which harbors the organism of Texas fever, would be infective.

In 1796 an outbreak of this mysterious murrain of cattle in eastern Pennsylvania attracted the attention of James Mease, then port physician of Philadelphia. Mease began a series of investigations which he carried on for some 30 years. Although he did not discover the cause, he did describe the postmortem lesions faithfully, and though he failed to incriminate the tick, worked out the epidemiology of the disease in a satisfactory manner. He may be credited with being the first in America to establish beyond doubt the role of an immune carrier in animal disease.[19] And in 1813 Mease delivered a series of lectures upon the anatomy and diseases of domestic animals.[20]

The colonial period in veterinary medicine may be considered as ending, perhaps somewhat belatedly, with the plea of Benjamin Rush in 1807

[17] B. W. Bierer: *A Short History of Veterinary Medicine in America.* Michigan State University Press, East Lansing, 1955: p. 49.

[18] J. M. Arburua: History of veterinary medicine in the United States. *J. Am. Vet. M. A.*, 1935, *85*: 10-38.

[19] James Mease: An account of a contagious disease propagated by a drove of southern cattle in perfect health. *Memoirs of the Philadelphia Society for Promoting Agriculture*, 1826, *5*: 280-283.

[20] James Mease: Introductory lecture of a course of lectures upon comparative anatomy and diseases of domestic animals. *Mem. Phila. Soc.*, 1814, *3*: 39-47. For a detailed account of the veterinary contributions of James Mease, *see* J. F. Smithcors: James Mease, M. D., on the diseases of domestic animals, *Bull. Hist. Med.*, 1957, *31*: 122-131.

for increased attention to the diseases of animals by the establishment of a system of veterinary education.[21] Rush called upon the University of Pennsylvania to establish a veterinary school, but perhaps anticipating that action would not be immediately forthcoming, recommended this study to medical students and physicians. Of considerable significance is his urging that medical men pay particular attention to the diseases of animals transmissible to man—perhaps the first public recognition in America of the interrelationship of human and veterinary medicine in the area of public health. Had the pleas of Rush found acceptance, they might have initiated another period, but since his concepts did not come to fruition until about 1870,[22] the enlightened attitude of this famous colonial physician provides a fitting conclusion to the colonial period in veterinary medicine.

In retrospect, it may be seen that with all the hardships of colonial life, it was more than a little fortunate that animals should have fared as well as they did. The relative immunity to animal disease afforded by the New World was a deceptive one, however, for the sporadic outbreaks of the early colonial period had approached epizootic proportions by the end of the 18th century. Few, other than medical men like Rush and Mease, saw these as the harbingers of worse times to come. The pre-revolutionary colonists can hardly be blamed if they appear to have been indifferent to the diseases of animals, for the stormclouds had barely begun to gather. The complacency of the post-revolutionary period is hardly defensible, however, and the disregard of the warnings sounded by responsible men at the turn of the century had easily predictable results.

The veterinary profession has only recently taken a belated interest in its American heritage. During the colonial and post-revolutionary periods we had no professional veterinary service, and no eminent practitioners, writers, or investigators. It is a distinct pleasure to acknowledge Benjamin Rush and James Mease as the first friends of the fledgling veterinary profession.

[21] Benjamin Rush: The duty and advantages of studying the diseases of domestic animals, and the remedies proper to remove them. *Mem. Phila. Soc.*, 1808, *1*: L-LXV. *See* also J. F. Smithcors: The contributions of Benjamin Rush to veterinary medicine. *J. Hist. Med. & Allied Sc.*, 1957, *12*: 13-20.

[22] The New York College of Veterinary Surgeons graduated a class of two in 1867, and with 291 graduates before it closed in 1899, may be considered the first successful veterinary school in the United States. Iowa State College has had a school in operation since 1879, and the University of Pennsylvania opened a veterinary school in 1884. These are the earliest American schools still in operation.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE AND REPORTS

MEXICAN PHARMACOPOEIA

In an article by J. Joaquin Izquierdo on "Origins and Development of Mexican Pharmacopoeiae" in the Jan.-Feb. 1952 issue of your *Bulletin*, I have noted discrepancies in the citation (p. 69) of "Nueva Farmacopea . . . ed. IV" and the title page of my copy of this issue, also in the composition of the bound volume.

The title of my copy is as follows:

"Nueva Farmacopea Mexicana de la Sociedad Farmacéutica de México."

In my issue there are also two sections (numbered) which are not mentioned in the article referred to. One section occurs between the preliminary portion of 50 pages (pp. I-L) and the main body of the text; it contains pages numbered I to XXXIV. This section is entitled "Primera parte"—Prolegomenos" and is made up mostly of tables of information of general application, such as atomic weights, etc.

Finally at the end of the volume and following page 1144 (index), a title page intervenes with the following title (in part): Primer Suplemento a la Farmacopea Mexicana . . . (1905); this is followed by two numbered sections, the preliminary pages numbered I to XII and the main body of the supplement composed of pages 1 to approx. 124 or 126 (my issue is complete only to page 122, stopping in the midst of the index). The Supplement includes a First Part, dealing with pharmacy legislation, the sanitary code, with lists of dangerous drugs, and lists of minimum equipment and drugs, and the penal code. The second part deals with the organization of a pharmacy. The appendix includes the International Protocol of Potent Drugs. Finally comes the Index.

GEORGE M. HOCKING

ANNOUNCEMENTS

American Association for the History of Medicine

Thirty-First Annual Meeting: New York, May 22-24, 1958. Chairman of the Program Committee: Dr. Iago Galdston, The New York Academy of Medicine, 2 East 103 Street, New York 29, N. Y.

NATIONAL NEWS

Alabama

The Lawrence Reynolds Library was dedicated at the University of Alabama Medical Center here on February 2. Presentation of the half-million-dollar collection of rare books and other historical medical items was made by the donor himself, Dr. Lawrence Reynolds, a native of Alabama but now residing in Detroit. Dr. Frank A. Rose, Jr., new President of the University of Alabama, accepted the collection on behalf of the University Medical College.

Armed Forces Institute of Pathology

The Centennial of the publication of Rudolph Virchow's "Cellular Pathology" will be celebrated throughout the year 1958 by the Armed Forces Institute of Pathology, Washington, D. C. The celebration program will start on March 3 with the first of a series of five daily lectures to be presented that week at 11 A. M. in Dart Auditorium. Captain William M. Silliphant, (MC), USN, The Director of the Institute and his staff cordially invite the scientific public in the Washington area to attend these and other lectures in the series that will be announced at suitable intervals.

Chicago

The University of Illinois announces that the annual D. J. Davis Memorial Lecture on Medical History will be given at 1:00 p. m., April 16, 1958, in room 221 of the Dental-Medical-Pharmacy Building. The lecturer will be Dr. Ilza Veith who will speak on "Oriental medicine and its concepts of the soul."

History of Science Society: The Ida and Henry Schuman Prize in the History of Science.

An annual award of $250 has been established by Henry and Ida Schuman of New York City for an original prize essay in the history of science and its cultural influences. This competition is open to undergraduate and graduate students in any American or Canadian college, university, or institute of technology. Papers submitted for the prize competition should be approximately 5,000 words in length, exclusive of footnotes, and thoroughly documented. It is hoped that the prize-winning essay will be suitable for publication in *Isis*, the journal of the History of Science Society. Essays dealing with medical subjects are not acceptable, although papers dealing with the relations between medicine and the natural sciences will be welcomed.

Papers submitted for competition should be sent to the Chairman of the Prize

Committee, Professor Raymond P. Stearns, 313 Lincoln Hall, University of Illinois, Urbana, Illinois. Inquiries about the competition may also be addressed to Professor Stearns. To be eligible for consideration, papers must be received on or before July 1, 1958. The announcement of the prize-winning essay will be made at the annual meeting of the History of Science Society, which occurs in December of each year.

Dr. Hugh Mercer's Account Book

Information has been requested as to the location of the Account Book of Dr. Hugh Mercer 1772-1774, kept at his office in Fredericksburg. It is described as being a large, folio size account book, containing 362 double pages in the finest English hand-made watermarked bond paper of colonial days. Correspondence in this matter should be directed to Dr. Wyndham B. Blanton, 828 West Franklin Street, Richmond 20, Virginia.

Death

Dr. Arno Benedict Luckhardt, emeritus professor of physiology at the University of Chicago, died on November 6, 1957. His interest in the history of medicine manifested itself in a series of publications, some of which appeared in this *Bulletin*, and in his collaboration with the late James Henry Breasted in the interpretation of the Edwin Smith papyrus. An obituary by Franklin C. McLean appeared in *Science*, March 7, 1958, p. 509.

PROGRAMS OF MEETINGS

Benjamin Waterhouse Medical History Society

March 18, 1958: "The Elephant Man," Chester S. Keefer.

Society of Medical History of Chicago

March 12, 1958: "History of Involuntary Movement," André Barbeau; "Uroscopy—The Clinical Laboratory of the Past," Joseph H. Kiefer.

NEWS FROM ABROAD

XVIth International Congress of the History of Medicine

An announcement of the congress which is to take place in Montpellier, Faculty of Medicine, September 22-28, 1958, was published in the January-February, 1958, issue of this *Bulletin*, p. 83. From a letter from the Secretary-general, Dr. Louis Dulieu, we add the following information: In addition to the four subjects previously listed, a fifth, "Varia," is also on the agenda. The speaking time for communications is 10 minutes each. Remittances may be made by check, either to:

Compagnie Algérienne of Montpellier nº W12-900-3; or to
Compte Courant Postal Montpellier nº 1178-03 (XVIe Congrès International d'Histoire de la Médecine, Faculté de Médecine, Montpellier).

BOOK REVIEWS

MOSHE BEN MAIMON. *Regimen Sanitatis: Letters on the Hygiene of the Body and of the Soul.* Hebrew Translation of R. Moshe Ibn Tibbon, Edited by Suessmann Muntner. Jerusalem: Mossad Harav Kook, 1957. xviii + 254 pp.

The present book, *Hanhagat Habriyut* ("Guide to Health"), Regimen Sanitatis, is the third of Maimonides' medical writings published in Hebrew translation, edited and annotated by Muntner,[1] whose text is known to this writer. The "Book on Asthma" and "Poisons and their Antidotes" appeared in 1940 and 1942 respectively,[2] while this volume is the first of the series "The Complete Medical Works of Maimonides" to be published by Mossad Harav Kook.

Written originally in Arabic in 1198, this work, like that of the preceding volume on Poisons and their Antidotes, was rendered from Arabic into Hebrew in 1244, by Rabbi Moshe Ibn Tibbon, physician and author of Montpellier. Although Muntner places the Regimen only third in order of importance of Maimonides' ten medical works, he nevertheless names it as the best known and most popular. And indeed its impact upon mediaeval medical writers—Hebrew, Arab, and Christian alike—has, according to some, been unrivalled even by the works of Galen. There are no less than six known Latin editions of it.

In this book, as in the previous two volumes, Muntner had in mind the English reader and has obligingly given him in English a rather comprehensive Preface and Introduction (pp. VI-XVIII)—a fact which simplifies the task of this reviewer. This will allow us to quote more copiously some of the representative statements of the master's text. This will be done especially in regard to section 12, Chapter III, about which every reader will likely accept Muntner's opinion that it is the most interesting set of "psychological rules for the diagnosis and treatment of mental disturbances." The text of the Regimen itself (pp. 27-85), is accompanied by ample explanatory footnotes.

According to Maimonides himself, the "Guide to Health" was not intended for the lay reader. It begins with a short introduction in the form of a letter in which the author addresses himself to Al-Afdal, the elder son of Saladin, who became king of Egypt in 1198. The letter is an answer to the king's request for medical advice. It outlines its four chapters which are subdivided into sections, 71 in number, which are answers to particular questions. The first chapter deals with rules of health in general; the second—a general regimen for the sick, where professional medical service is not available; the third—the particular regimen for Al-Afdal; the fourth—"useful suggestions, general and particular, for the healthy and the sick anywhere and at anytime. . . ."

Maimonides quotes freely Hippocrates, Galen, Avenzoar, Rhazes, Aristotle and Abu Nasr al-Farabi, and elaborates and explains further the point he wishes to make.

Let us now acquaint ourselves with a few representative passages of the text itself. (The translation here is rendered by the reviewer faithfully though not literally):

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[1] *See Bull. Hist. Med.*, 1952, *26*: 486-487.

[2] *Ibid.*, pp. 491-494.

"And all physicians agree that there is less danger in eating little of an inferior type of food than in overindulgence in better and healthier foods. For when one eats insufficiently of poor foods, they can be digested well and nourish the organs (at least) in some useful measure . . . but he who satiates himself, albeit with the best baked bread or the choicest meat, can in no way ever digest it properly. . . . And as to avoiding satiety, the physicians have warned against overindulgence, and to curb the appetite before satiety . . . for, different dishes have different modes of digestion, each dish according to its nature." (Chap. I, section 1).

"The great masters (in medicine) have already pointed out that the medical profession is a human necessity because of man's being subject to illnesses, (especially) because of dietary indiscretion, and there is always need for him to consult a physician at one time or other, and for some reason or other. . . ." (II, 1).

"And it was already explained that man requires the guidance of the physician in all matters (of health) and at all times, but the need of the physician at the time of illness is even greater, for then his absence is dangerous. And in this matter the ignorant think that one does not need the physician except when one is ill. And many a time a man gets sick while travelling or living in a (small) city where there is no physician, or if there is one, his wisdom cannot be relied upon. . . ." (II, 2).

"And Hippocrates has already dwelt lengthily in many places in his books to praise nature that it is wise and subtle in that it does what is right and that it does not require remedies. But it behooves the physician to assist it, to support it only and to follow its course." (II, 3).

"And Rhazes said in one of his famous passages that when the disease is stronger than the patient, then there is no hope for him to recover from it, and no physician can ever help him. But if the strength of the patient be greater than that of the disease, then he does not need the physician, for nature heals him. And when the strengths of the patient and the disease, (respectively), are equal, then the former needs the physician to strengthen him. But that is (possible only) when the physician is an accomplished one and he knows how to strengthen and take care of him so that he overcome the difficulties of nature. But most physicians are gravely mistaken thinking that they augment the strength when in reality they weaken and spoil the way of nature. And it is of this that Aristotle says in his "De Sensu et Sensibili" that most people die from treatment because of the ignorance of physicians about nature. . . . And it is for these reasons that the kings convene many physicians and choose from them the wisest and most reputable and most experienced, in the hope that through this consilium they may escape the mistake." (II, 4).

"It was already explained . . . that it behooves the patient to follow nature if there is no good physician available. And following nature requires: that he not take a remedy which is not to be taken by the healthy; and that he should not forget the limit of total food intake, and if he be thirsty—let him drink, and if he be hungry—let him eat as he has been accustomed (to eat), and at that he should eat (only) the light kind of the foods to which he is used. And he should know that even if he can avail himself of a reputable physician or many physicians, he should (nevertheless) not venture to turn to drastic remedies, except upon the advice of a very (very) accomplished and astute physician whose wisdom and experience have been proven. But without such (a physician) he should choose, when ill, the mild remedies and not the strong." (II, 5).

"And one should never fail to fortify the natural (physical) strength with nourishment, as well as fortify the appetitive and spiritual. . . . And thus one should fortify the vital (spiritual) strength with musical instruments, and tell the patient joyful stories which lift his soul and delight his heart, and tell him news that will divert his mind so that he and

his company may laugh at it; and those who are chosen to serve the patient should likewise be congenial to him. All this is imperative in every illness and in the absence of a physician, these things should be arranged on one's own initiative." (II, 20).

"And whatever can be accomplished by a simple regimen, a single drug, should not be carried out by a complex one. And if one cannot do without a complex one, let the regimen be as little complex as possible, and let the multi-complex remedies be chosen only if absolutely necessary. And if these rules apply to a good physician, how much more are they applicable when no physician is available!" (II, 22).

And now we come to what is rightly regarded as the "pièce de résistance" of Maimonides' Regimen. Shall we, too, apply to it the all too banal term *psychosomatic*?—Let us rather read the text first, and then try to give it its due.

Regimen Sanitatis Spiritus

"Your Highness, may God prolong his years, is surely aware that the spiritual affects are capable of bringing about in the body great changes, which are explicable and discernible to all. As this may attest: You see a man of strong build, and his voice is strong and pleasant, and his countenance is bright. But no sooner does something that upsets him greatly come over him suddenly, than his countenance falls at once, its brightness disappears and it changes, and his posture stoops, and his voice becomes hoarse and thin. And if he should want to raise his voice with all his might, he cannot; and his strength weakens, and at times he trembles from weakness; and his pulsating vessels become small and weak; and his eyes change and his eye-lids become too heavy to move; and the surface of his body becomes chilled, and the desire for food is lost. The reason for all these signs (is) the escape of the natural heat and blood deep into the interior of the body. And contrariwise, you see a man of weak build and strange appearance, whose voice is thin; and no sooner does something happen to him that gives him great joy, than you see his body become strong, his voice becomes louder, his face brightens up and his movement is enhanced, his pulsating vessels become stronger and bigger, the surface of his body gets warm, and the joy and delight is seen on his face and eye-lids (sic). And his condition is very obvious so that he cannot conceal it and there is no need for much observation to recognize it. And the reason for all these happenings (is) the movement of the natural heat and blood to the periphery of the body. And thus the states of the apprehensive and the hopeful, the confident and the secure are known; and so are explained the states of movement of all his thoughts, of despair or of success. For at times the desperate man so passes on from his grief to (actual) misfortune that he is not aware of the diminution of his vision and his disturbance. But, the sucessful man, on the other hand, is cognizant of his enhanced power of vision, so much so that he imagines that the visibility of the air itself has become clearer and brighter! And this matter is evident and there is no need to enlarge upon it." (III, 12).

"And therefore the physicians have ordered to pay attention to the psychic movements and to take note of them always, and to aim to keep them in equilibrium at time of health and in every illness, and never to prefer any other regimen . . . the physician is not to give preference to anything before correcting the state of their souls in removing these affects." (III, 13).

"The value of the air of large cities as compared with that of a wilderness and forests is like the value of thick and muddy water as compared with that of clear and fine water. And this (is due to the fact) that the cities have tall buildings and narrow streets and their inhabitants throw into them plenty of refuse and their dead (animals), and the excreta of their animals and the stench that rises from their foods. All this makes their air rancid, turbid, smoky and thick; and so are the winds. But the individual inhabitant

would not appreciate the situation he finds himself in. And if you cannot find a solution to this, for we have been raised in cities, it is well for you at least to choose a city whose horizon is broad (open). . . ." (IV, 2).

"Even though you be extremely careful and guarded in your aim, it is nevertheless inevitable that light cases (of illness) will always occur in the human body. For instance: Sometimes there is diarrhea, and sometimes constipation; or at times one may find a change in his digestion, or he may have a slight headache, or a certain part of the body may hurt a little, and many such like. And be extremely careful not to start treating this, and not to hasten to use those remedies which are intended to stop this (type of) minor illness—something against which the Prince of physicians* had already warned. . . ." (IV, 3).

"Bathing is a necessity for the upkeep of health, and for the treatment of the sick. And the physicians should prescribe bathing at the time of sickness according to the various illnesses, to the seasons and to the age of the patient. But as to the regimen of (normal) health, it was already said that one should frequent the bath every ten days. . . ." (IV, 11).

"Custom and habit are a great principle in the establishment of constant health and the institution of therapy. It behooves one not to change his health habits suddenly, be it eating, drinking, coitus, bathing or exercise, but to conform in all these to the (customary) habit. And even if this change from the habitual be contrary to medical precept, he should not deviate from it . . . that is, do not insist at time of illness to change one's habits even with the best of intentions." (IV, 15).

In spite of quoting so fully from the text, I have restricted myself only to matters of principle. I did not deem it wise to quote detailed therapeutic listings of various food stuffs and the like, which would surely be of sheer linguistic or pure dietetic interest. Nor must one be misled in thinking that the above textual citations have been advanced to imply complete originality of the author. On the contrary, Maimonides himself frequently leans on his great predecessors—as has already been pointed out above—and often refers explicitly to them, but his simplicity of example, his soundness of medical principle and his clarity of style are such that, in the main, they still hold true of present-day medicine and merit the emulation of the modern medical writer.

Muntner's alphabetical listing of the Materia Medica contained in the Regimen (pp. 87-127) is most informative and welcome, since the editor has painstakingly gone into every term both from the standpoint of meaning *per se*, as well as comparative linguistics. To enhance the usefulness of the material, Muntner has added a set of indices of the terms of the three languages found in this work, viz., Hebrew, Arabic, Greek a.id also other languages relating to words used by way of comparison.

Under the heading "Appendices" (*Nispaḥim*), for which I would prefer the name Addenda (pp. 131-233), Muntner has included in this volume *Hilkot Deot* (Book on Science) and Extracts from *Shmonah Prakim* (Eight Chapters), by Maimonides; also, "Together with the 'Guide of Health' (Regimen Sanitatis), I publish here for the first time a Hebrew translation of a treatise of the same title written by Averroes, Arab physician and philosopher, in order to enable the critic to judge for himself the great advantage of Maimonides' treatise over the dry discourses on the same subject by his predecessors and even over that of Averroes,

* Hippocrates.

his most famous contemporary." (Muntner's Preface, p. viii). In his genuine modesty Muntner does not, however, include in the preceding, his own interesting essay "On Psychosomatics (Manifestations of the soul in daily life)," which the reader can find listed in the Table of Contents (p. v).

The inclusion of this group of addenda may evoke in various readers 'Chacun à son goût' reactions. Thus, for example, this reviewer's first reaction to this anthological collection was the Talmudic "*Tafasta merubeh—lo tafasta*" (Too much grasped—nothing retained), and that it might have perhaps been better to remember another equally wise saying: "*Muat maḥasik et hamerubeh*" (That little which contains much). However, on reflection one might just as well counter with a Biblical dictum: "*Meaz yaṣa matok*" (Out of the strong came forth sweetness)—the volume has only gained by the pooling of these regimens, thus enabling us to compare their contents, texts, styles, etc., which is what the editor set out to do.

By the same token and speaking of comparisons, an apologetic note may perhaps not be amiss. In reviewing this book, I was tempted to venture a comparative study of the RaMBaM's *Hanhagat Habriyut* in regard not only to the regimens in this volume but also in other writers.[8] But that could have taken us too far afield, which is not the purpose of a specific book review. Besides, I thought that our readers might prefer a selection of representative portions of the text reviewed, rather than a discussion of materials not readily available.

And now it is only fair, I believe, to close this review by stating that Dr. Muntner is to be congratulated for this new contribution to the history of medicine. Our wish is that he succeeds in his great effort to finish editing all the remaining works of the RaMBaM, which he set forth to do and which medical literature would like to possess.

MORDECAI ETZIONY

JOHN B. BLAKE. *Benjamin Waterhouse and the Introduction of Vaccination.* A Reappraisal (Yale University Department of the History of Medicine Monograph Series no. 33). Philadelphia: University of Pennsylvania Press, 1957. 95 pp. $4.00.

Dr. John B. Blake's excellent monograph is a fresh study of the early history of vaccination in America, with special reference to the role and reputation of Benjamin Waterhouse.

Dr. Blake points out the curious fact that until the last two decades of the nineteenth century Waterhouse was almost entirely ignored by American authors. In 1881 a Bostonian named H. A. Martin reversed the tendency of the time and initiated a laudatory trend which has been dominant until the present. The eulogistic treatment, which portrayed Waterhouse as the innocent victim of public prejudice and professional rancor, was based directly or indirectly on Waterhouse's own statements. The publication of new facts by J. A. Spalding in 1916 and by Morris C. Leikind in 1939 led Dr. Blake to undertake a thorough reappraisal. In

[8] *See*, e. g., Dr. David Margalit, "Hygiene According to Maimonides," *Koroth, Quart. J. Hist. Med. and Sc.*, Jerusalem-Tel Aviv, 1955, *1* (7-8): 235-251 (English summary, pp. VII-VIII).

the course of the investigation he came upon a large quantity of additional material much of which had long lain dormant in Boston newspapers.

After careful presentation and analysis of the facts in the case, Dr. Blake evaluates Waterhouse's work as follows:

> Between 1799 and 1802 Waterhouse unquestionably contributed significantly to the diffusion of vaccination. While his friendship with Lettsom and Haygarth gave him an initial advantage, he worked hard to convince skeptics and to teach erring practitioners the importance of careful attention to the subject. He furnished active vaccine to Virginia and other Southern states through Thomas Jefferson, to New York through Valentine Seaman, and to many other communities. For nearly all this work he neither asked nor received any pay. From March, 1801, on, he maintained a continuity of cases and resupplied many who had failed. He made himself through devotion to this cause one of the leading American vaccinators during the years when the practice was first becoming established.
>
> At the same time, the basic discovery and the most important early works on vaccination were English. Waterhouse was not an originator, but a promoter. Nor was he the only American physician who imported the lymph. . . .

It is also shown that at the start of his career as a vaccinator, Waterhouse attempted to establish a system of regional monopolies, in which a quantity of vaccine and the exclusive right to its use in a given district were granted to a practitioner in return for one fourth of the profits. Waterhouse later attempted to deny this. He, therefore, appears as a liar and, in addition, as vain, contentious, and disagreeable.

These facts are sufficient to explain why Waterhouse was detested and why the detestation long outlived him. At the same time it is relevant to consider certain physical difficulties with which he had to cope. The vaccine was delicate and did not invariably survive the transatlantic journey. Being unstable, the material was subject to attenuation. It could not be tested or even identified without actual trial in human subjects. Indeed, in one instance Dr. Elisha Story of Marblehead unknowingly used smallpox virus instead of vaccine virus and initiated an outbreak which killed 68 persons. Waterhouse was genuinely troubled by the fear that the vaccine might fall into the hands of incompetent or unscrupulous persons. This feeling gained additional strength from the fact that the practice of vaccination was then on trial in America and was in competition with the older method of variolation. Hence improper technique might bring undeserved disrepute on a valuable discovery.

The Waterhouse story, so meticulously investigated by Dr. Blake, has many aspects and implications which claim the attention of the historian. An essential feature of the background is the fact that America in 1800 was still mainly an importer of ideas and of materials; hence Waterhouse ranked as a promoter and not an originator. There was the further fact that Jennerian vaccination was an empirical observation which had far outrun the basic knowledge and technology of the era. The human factors in the situation are those which have changed least: Waterhouse at the outset suffered an attack of greed, was rebuffed by the public conscience and by the ethics of the profession, and then returned to a state of humanitarian grace.

The timeliness of the present volume cannot fail to astonish those readers who have had experience with the distributional difficulties that followed the introduction

of the Salk poliomyelitis vaccine. An even more exact analogy is the recent maldistribution of the Asian-influenza vaccine. The advance of science has added technological improvements, mass production, and speed, while the human factor of commercial exploitation has changed only in scale and technique. At the present moment, an angry reaction having set in, it is probable that we are soon to witness an evolution in the distribution of new vaccines. Once again the ethical factors may succeed in bringing about the necessary reforms.

These broader considerations are all connected, directly or indirectly, with the Waterhouse story, which Dr. Blake has carefully built up for us by his laborious researches and has narrated in his clear, succinct, and judicious monograph.

SAUL JARCHO

Catalog of The Florence Nightingale Collection. New York: Department of Nursing, Faculty of Medicine, Columbia University-Presbyterian Hospital School of Nursing, 1956. vi + 79 pp. $2.00.

Interest in Florence Nightingale continues to the present, not only among nurses, but among members of other professions, historians of nineteenth century England, and the public generally. Whatever aspect of her character and activities holds the attention,—her reform of nursing in the Crimean War, her philosophy of nursing, her interest in sanitation, race, religion, nutrition, or statistics,—it will be found expressed in her letters and other writings.

Miss Nightingale is pre-eminent as a letter writer. A bibliography of her letters, now being compiled under the sponsorship of the Florence Nightingale International Foundation, indicates that the volume of her correspondence is perhaps the largest on record. Fortunately for those who would read the letters, her handwriting is clear, and her ideas are stated with incisiveness. The letters vary in length; some are short notes, and others extend to many pages. They are to be found in various locations throughout the world. Some are in the possession of individuals, while many are in special collections. Among the latter in the United States, the collections of the Johns Hopkins Hospital School of Nursing and the Columbia University-Presbyterian Hospital School of Nursing are perhaps most widely known.

The collection of Nightingaliana at Columbia University-Presbyterian Hospital School of Nursing includes not only letters, but also books written by Miss Nightingale, books about her, pictures, and other memorabilia. The entire collection is housed in a pleasant room in the school of nursing library where it is easily available for study and research. The usefulness of the letters is increased by the unique design of the cabinet which protects them. The *Catalog* of the collection is organized to include letters written by Miss Nightingale, arranged both chronologically (from 1838 to 1901) and alphabetically according to the addressee; those written about Miss Nightingale by her family; those to Florence Nightingale; writings by Florence Nightingale; biographies of Miss Nightingale; miscellaneous books, pictures, and other miscellany. Each item is carefully annotated.

The most significant group includes the letters written by Miss Nightingale herself. Some of the subjects touched upon include: the Institution for Sick

Governesses; the Crimean War; hospital improvement; welfare of the troops; sanitation in India; the training of nurses; and many other matters. The statements concerning the training of nurses set forth Miss Nightingale's well-known ideas on the subject. A recurring theme throughout is Miss Nightingale's ill-health. In spite of this, one is impressed with the prodigious capacity for accomplishment.

Several letters deal with the concern felt by the writer for some unfortunate person. Her generosity, not only with money, but in other very practical ways is indicated by requests for medical care to be paid for by her, payment of rent, the sending of dietary and other donations. A series of letters to Frances Groundsell includes one listing gifts, mainly of food, which Miss Nightingale asks Frances to distribute for her.

Miss Nightingale's custom of sending copies of her own and others' writings to individuals who, she felt, could be useful in bringing about some reform close to her heart is shown by requests to Messrs. Harrison, publishers, to send certain books to persons among her acquaintances. A few letters are replies to requests to lend her name to some cause. Her reply invariably was that inasmuch as she could not lend her "work," it would create a wrong impression to lend her name.

In a communication to Dr. Thomas Alexander, member of the Royal Commission on the health of the Army after the Crimean War, dated April 23, 1858, her exactness in detail is shown. She asks him to write "in full the scheme of nine Diets, stating in each case what the Patient is to have for 'breakfast, dinner, tea or supper,' and so have the scheme of Diets preparatory for the press, also adding such general instructions as seem necessary for the system of diet in Field Hospitals." One letter refers to Pastor Fliedner. This is directed to Mlle Bunsen, dated November, 1852, and "mentions the recovery of . . . [the pastor] through Madame Fliedner's care along with the care of 8 children, and the care of the entire Institution."

Of the letters on nursing, one, dated May 6, 1881, contains Miss Nightingale's well-known phrase, "To be a good Nurse one must be a good woman," and she adds, "let us seek all of us rather to be good than clever Nurses." In a communication dated April 5, 1868, to Lady Eastlake, Miss Nightingale writes of Agnes Jones, pioneer in workhouse nursing. In one of several letters to Charlotte Macleod, Superintendent of the Waltham Training School for Nurses in Boston, who was studying nursing conditions in England, Miss Nightingale says that ". . . in the larger London Hospitals, 'the keynote of the Hospital is the Ward Sister. *She* is the trainer.'"

It is manifestly impossible within the compass of this brief review to do more than to indicate some of the interests of Miss Nightingale's active mind. A study of the *Catalog* reveals such other diverse matters as her thankfulness for the saving of the lives of four nurses shipwrecked returning from Canada; the kind of threshing machine for threshing rice in India; plans for a new kind of coffee house in London; old fashioned roses; and the Persian kitten "lost on the other side of Walford Station," to mention a few, some possibly seldom considered in connection with Florence Nightingale.

The *Catalog* is an important addition to Nightingale literature. It should prove useful to those wishing to study the philosophy, activities, and the life of Florence Nightingale, and her place in history.

ANNE L. AUSTIN

NATHAN W. SHOCK. *A Classified Bibliography of Gerontology and Geriatrics.* Supplement One 1949-1955. Stanford, California: Stanford University Press, 1957. xxviii + 525 pp. $15.00.

The publication of this book symbolizes the rapid increase of interest in the problems of aging. In 1949, it was possible to list the publications in gerontology and geriatrics from 1900 to 1948 in one volume of 599 pages. Now, in the first supplement to that volume, it requires some 525 pages to record the literature from 1949 to 1955. The great bulk of the literature in this field began to appear after 1900, so it probably is safe to deduce that almost as many books and articles on aging were produced during the six years covered by the Supplement as in the previous two thousand years.

Although this tremendous expansion is a phenomenon of only the past few years, it should not be forgotten that gerontology and geriatrics have deep roots in the past. It is fitting, therefore, that Dr. Shock has included "Historical References" in the General Orientation section at the beginning of the Supplement. This marks a distinct improvement over the situation in the first volume in which the historical references were relegated to the Miscellaneous section in the last part of the book.

Under "Historical References" we find listed some nineteen articles published between 1949 and 1955. Everyone interested in the history of gerontology and geriatrics will want to consult this list. However, it should be mentioned that nearly all the articles listed are quite brief, and some of them may seem rather antiquarian in tendency.

Also under the heading of historical references is a list of thirty works on aging published before 1900. These are early works which have come to Dr. Shock's attention since the publication of his first volume which recorded a much larger number of such works. Readers of this journal can help to make the list still more complete by notifying Dr. Shock of early works on old age or longevity which are not yet registered in his bibliographies.

A few criticisms come to mind in regard to the historical references. For one thing, it probably would be desirable to have all the articles on the history of gerontology and geriatrics in one list. In the Supplement, apparently by an oversight, these articles appear in two separate lists, one on page 13 and the other on page 15. Also, as in most long bibliographies, there occur some mechanical errors of classification. For example, only one article by S. R. Burstein is recorded in the historical references, although there are a number of other historical articles by the same author cited in other sections.

Of course, historical material forms only a small fraction of this vast bibliography. The collection is organized on a very comprehensive scale ranging over biology, clinical medicine, psychology, and sociology. The Forest Park Foundation was well advised to provide financial support for this useful project.

GERALD J. GRUMAN

NATHAN W. SHOCK. *Trends in Gerontology.* Second Edition. Stanford, California: Stanford University Press, 1957. viii + 214 pp. Ill. $4.50.

Within the confines of this small volume the author, who is Chief of the Gerontology Branch of the National Heart Institute and the Baltimore City Hospitals, has set forth, primarily for the lay reader, a concise review of current activities in the rapidly expanding field of old age. This second edition of a book published five years ago is a complete re-writing, rather than a revision of the original.

He defines gerontology as "the scientific study of the phenomena of aging," emphasizing that "gerontology is concerned not only with changes in structure and function in individuals with passage of time, but also with their reactions to each other and to their environment." Accordingly emphasis is placed not only on the changes in cells, tissues, and organs but also upon the complicated socio-economic problems resulting from the changes in the age make-up of our population since more and more individuals are living into the higher decades. The various chapters are devoted to population statistics, to employment and retirement problems, to income maintenance, health preservation and disease prevention, to housing, to education, to community problems and social work as well as to the direction and potentials of research.

The author has presented the highly interesting accomplishments and endeavors of our society in a lively readable style and the reviewer can find few omissions or oversights. The book can be highly recommended to the newcomer in the field as a splendid introduction, suitable for p' ysicians, graduate nurses, and social workers, as well as for the laity.

F. D. ZEMAN

BRYAN GANDEVIA. *An Annotated Bibliography of the History of Medicine in Australia.* Monographs of the Federal Council of the British Medical Association in Australia. Number 1. Sydney: Australasian Medical Publishing Co., [1957]. 140 pp. £1.15.0 (Australian).

A general history of medicine in Australia has yet to be written but there are many articles and a number of publications which deal with particular facets of the development of the science and art in this country. These works are widely scattered and the author of this bibliography has brought them together in such a way as to form the framework for any future historiography.

The publications are listed by subjects which range from the medical aspects of the discovery and exploration of Australia to the history of the many medical specialities, aboriginal medicine, medical journalism and Australian contributions to medicine. Each entry is annotated and this is particularly well done, for errors of fact in some of the papers are pointed out and the reader is given a short précis of the original. Adequate indices are provided which cover both subjects and personal names, the annotations also being included. As the author mentions in his introduction, the bibliography is intended to cover medico-historical articles only and not original papers of historic significance. It is necessary to point this out, for some of the important contributions of Australians to medicine will not be found listed in this work, although a number will be referred to in papers of a more general nature.

The section devoted to biography and autobiography will prove most valuable to Australian readers; indeed it may stimulate some of them to write about those pioneers whose names do not appear in the list.

Our medical pioneers, as in any new country far removed from the great medical centres, were thrown on to their own initiative and resources, this being particularly obvious in the more sparsely populated areas of the country. However, they responded nobly to the challenge and were quick to take up and develop new methods of treatment and new ideas. William Bland, in 1832, ligated the innominate artery for aneurysm, his case being the seventh recorded in world literature. The benefits of anaesthesia were quickly realized and ether was in frequent use in Launceston, Melbourne, and Sydney by 1847. James Rudall, of Melbourne, performed a gastrostomy in a case of malignancy of the oesophagus in March, 1867. William Gilbee, at the Melbourne Hospital, was successfully using Lister's antiseptic technique in December, 1867, and John Holden Webb, of the same Hospital, described the point of maximum tenderness in appendicitis in 1884, five years before McBurney.

These are but a few of the many historical facts that can be learned from this excellent bibliography. To those interested in Australian medical history this book is invaluable and the author deserves our thanks and our congratulations. Those interested in medical history in general will find much to interest them and will profit by perusal of its pages. It is a reference work which can be thoroughly recommended to all libraries.

KENNETH F. RUSSELL

Janus, Revue internationale de l'histoire des sciences, de la médecine, de la pharmacie et de la technique. Vol. XLVI, No. 1. Brill: Leiden, 1957. 80 pp. Ill. Annual subscription price (4 fasc.) 24 guilders.

After 45 years of existence, *Janus,* in 1941, became a victim of World War II. With the present issue it has been revived, though in different form. What used to be the "Archives internationales pour l'histoire de la médecine et la géographie médicale," published as the "Organe de la Société historique néerlandaise des sciences médicales, exactes et naturelles," now appears as an international review for the history of science, medicine, pharmacy, and technology. In the present number, about half of the space deals with matters medical or closely related to medicine. *Janus* only accepts articles in English, French, or German. As J. A. Vollgraff writes in the opening article: "Thus we exclude the Dutch language not as being less capable of expressing all ideas, but for the good reason that we do not judge it sufficiently known to the scholars of the French, English, and German nations, to say nothing of the other European nations." Considering the fact that the journal is edited in Holland, by a Dutch editorial board, this is a remarkable sacrifice. The new *Janus* foresees a section of "Material for the history of the sciences of modern times" which is to facilitate the work of future historians. May the optimism that our descendants will be interested in what we collect for them be justified.

The *Bulletin* greets "Janus redivivus" and wishes it vigor and success in its new life.

OWSEI TEMKIN

THE BULLETIN RECENTLY RECEIVED *

H. H. Cunningham. *Doctors in Gray,* The Confederate Medical Service. Baton Rouge: Louisiana State University Press, 1958. xii + 339 pp. Ill. $6.00.

Dania Polyglotta, Répertoire bibliographique annuel des ouvrages, articles, résumés, etc. en langues étrangères parus en Danemark. Douzième année, 1956. Publié par l'Institut Danois des Échanges Internationaux de Publications Scientifiques et Littéraires, sous la rédaction de son directeur K. Schmidt-Phiseldeck avec la collaboration de Ingrid Appel. Copenhague, 1957. 224 pp.

Luis S. Granjel. *El pensamiento medico del Padre Antonio José Rodríguez.* (Publicaciones del Seminario de Historia de la Medicina de la Universidad de Salamanca.) Salamanca, 1957.

Frans Jonckheere. *Les médecins de l'Égypte Pharaonique,* Essai de Prosopographie. (La Médecine Égyptienne, No. 3) Bruxelles: Édition de la Fondation Égyptologique Reine Élisabeth, 1958. 172 pp. Ill.

Paul Morawitz. *The Chemistry of Blood Coagulation.* Translated by Robert C. Hartmann and Paul F. Guenther. (American Lecture Series, Publication Number 314). Springfield, Ill.: Charles C Thomas, 1958. x + 194 pp. $4.50.

* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section. Items received, other than those assigned for review, are ultimately incorporated into the collection of the Institute of the History of Medicine.

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